BUSINESS/PROFESSIONAL MICROCOMPUTER SOFTWARE MARKET 1984-86

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The Business/Professional Microcomputer Software Market, 1984-86 by
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EXECUTIVE SUMMARY

. The business/professional market for microcomputer software is growing at more than 100% per year and reached an estimated $936 million in customer purchases in 1983, up from about $430 million in 1982. In publishers' receipts, the market was worth $468 million in 1983 compared to $215 million in the previous year.

. The dynamic growth in this market is being fueled by three factors: the steady increase in the population of personal computer owners; the big jump in the number of intermediaries and resellers marketing computer software; and a series of technological breakthroughs on the part of the software creators. This latter factor is the aspect of the software business that most supports the proposition that business/professional software will constitute a multi-billion dollar industry within several years.

. Business/professional software is part of a wider industry involving the provision of business and professional services, including information services. The business and professional services market is worth more than $140 billion in annual expenditures by U.S. companies, and encompasses such segments as legal services; accounting and bookkeeping services; management consulting services; data processing services; and the publication and sale of copyrighted business information. To the extent that microcomputer software can substitute for some portion of the above activities, it can continue to grow dynamically for much of the current decade.

. Systems software and applications software constitute the two branches of the industry. Systems software controls the operations of a microcomputer and its accessories, whereas applications software is used to perform specific tasks, e.g. in accounting, finance, sales analysis, data base management or word processing.

. Microsoft, creator of the MS-DOS operating system and provider of the MBASIC language, leads among microcomputer systems software firms; its close competitor is Digital Research Corp. Both firms are diversifying into applications software.

. Current leaders in applications software include Visicorp, MicroPro, Peachtree Software, Ashton-Tate, Sorcim and Software Publishing Corp. The bestselling categories of programs are word processing, electronic spreadsheets and data base or file management programs, with nearly every personal computer owner purchasing one or more such programs--either at the time he buys his computer, or within the first year of purchase.

. In 1983, Microsoft and Visicorp were the largest independent software publishers measured by total revenues; their revenues were $70 million and $60 million respectively. In 1984, both companies could exceed $100 million in sales.

. The bestselling applications programs, "VisiCalc," "WordStar," "SuperCalc," "PFS:File" and "dBASE II," have each sold more than 100,000 copies, with "VisiCalc" the clear leader at 700,000, and "WordStar" in second place at 600,000. These unit sales figures would be high even for conventional business/professional publishing, in which few books or periodicals sell such quantities. But the figures are astounding in the context of the personal computer industry, because they constitute such a high percentage of the universe of computer owners.

. To balance the picture, it should be noted that these bestsellers constitute less than 1% of the many thousands of business/professional titles available as of late 1983. Many business/professional programs sell in the hundreds or low thousands of units, and fail to recoup the money spent to develop and promote them.

. The marketing and distribution of business/professional software constitutes an area of great confusion at present. Publishers, computer manufacturers, independent distributors and retailers are all involved in the sale of microcomputer software, sometimes in cooperation, sometimes in competition with, one another. The independent distributors have assumed a major role in the sale of software that moves through retail channels, because of the service these companies offer the retailers. Softsel and Micro D are the two largest software distributors; overall, distributors are estimated to account for 50% to 75% of the software sales that go through retailers.

. Retailers selling software include computer hardware stores; software stores; and other merchandisers, such as bookstores, record stores, catalog showroom operators and mass merchants like K mart and Toys R Us. Historically the computer stores dominated the retail sale of business software, but their share of total software sales is declining owing to the entry of many other kinds of retailers into the business.

. Retailers affiliated with a chain, either as wholly owned subsidiaries or as franchisees, are the fastest growing type of computer and software merchant. Among the leaders are ComputerLand, with 500 outlets; Radio Shack, with 400 computer centers; Entre Computer Centers, with 75; ComputerCraft, with 33; CompuShop, with 35; Software City, with 52; and Softwaire Centers International, with 30.

. High discounts have become the accepted practice in business/professional software, in sharp contrast to the norm in business books or business equipment. It is not unusual for a publisher to grant distributors discounts of 55% to 60%; these wholesalers in turn allow the retailer between 40% and 50%, even on very small quantity orders. As publishers increase their spending on sales forces, advertising and promotion, it may not be possible to maintain these discount levels.

. Competition, and the high gross margins inherent in business/professional software, are working to bring prices down, but so far at a gradual, not a precipitous, rate. Customers will probably continue to be willing to pay a premium for programs that are perceived to be superior.

. Advertising and promotion are necessary both to stimulate final customer demand for software, and to demonstrate to the trade that a publisher is serious about supporting his product. The highly successful introduction of Lotus Development Corp.'s "1-2-3" integrated software package, with more than $1 million in promotion and advertising, has helped change the way software is sold. Major companies like Microsoft, Visicorp, MicroPro and Peachtree now spend between $2 million and $5 million per year on space advertising and related promotion; these sums may represent between 5% and 15% of annual revenues.

. The major costs for business/professional software companies are marketing and sales, product development, manufacturing and general and administrative overhead. Marketing and sales are consuming about 35% of the sales dollar for a typical company, followed by manufacturing/fulfillment expense, at 15%, and product development costs, at 15%. In terms of the opportunities for suppliers to the software industry, the largest sums are spent on: fees and royalties to outside developers; space advertising; printing and promotion; and blank diskettes and disk replication.

. Software authors and creators, for example, should earn nearly $25 million in royalties from software publishers in 1983; magazines, direct mail houses, trade shows and other suppliers of advertising/promotion services should have gross revenues from software publishers of about $55 million; and manufacturers, printers and duplicators should take in about $70 million.

. Pretax profits for the most successful business/professional software companies can reach 25% of revenues. These margins are comparable to what can be earned by the most profitable business publishers, and the most profitable mainframe software companies. The most profitable software companies include Lotus, Ashton-Tate and Microsoft. Many smaller companies are operating unprofitably, however, and even some of the largest software houses have seen profits squeezed by competition and by the relentless upward pressure on sales and adminstrative expenses.

. The challenge for the leading companies in business/professional software today will be to demonstrate that they can augment their product lines with new titles that sell. Lotus, MicroPro, Visicorp, Sorcim, Software Publishing Corp. and Ashton-Tate are all highly dependent on either a single product or a closely grouped family of products. No one company has yet shown that it can produce and market microcomputer software across the range of applications or systems categories.

. In the next two years, a strong challenge to existing software leaders is likely to come from mainframe software companies on the one hand, and from leaders in business/professional information services on the other. In the latter category are firms like Dun & Bradstreet, McGraw-Hill, Prentice-Hall,

Dow Jones and Commerce Clearing House; some of these companies are likely to invest tens of millions of dollars to acquire or start microcomputer software divisions. Among mainframe software companies, MSA has a major stake through its ownership of Peachtree, as does Computer Associates, which purchased Information Unlimited Software. Cullinet, Applied Data Research, Informatics, On-Line Software and Martin Marietta are others that can be expected to enter the field, or to deepen their involvement in it.

. One of the unknowns in the future of microcomputer software is the extent to which the major computer manufacturers will enter the field aggressively. It can be estimated that software sales account for at least 5% and as much as 10% of the personal computer revenues at IBM, Apple and Tandy; in each case this means software revenues in 1983 of more than $50 million. Any one of the manufacturers could affect growth and profits of independent software publishers by undertaking more internal software development, or more active acquisition of software from outside developers.

. The shadow of the video game business hangs over the computer software field in the following sense: an oversupply of software products is building and must inevitably lead to price cutting. Rather than sticking to today's prices until forced to make cuts, leading business/professional software publishers would be well advised to plan on cutting prices by 20% to 30% per year for the next couple of years. Such a strategy would force the software publisher to organize for greater efficiency and for lower gross margins.

. The median growth rate for business/professional software publishers is forecast at 75% in 1984, dropping to 54% in 1985 and 39% in 1985. This would mean total customer expenditures of $3.5 billion, and total publisher revenues of $1.75 billion, in 1986. Under the low forecast, customer spending would be $2.3 billion in 1986; under the high forecast, customer spending would be $4.65 billion.

I

INTRODUCTION

The business/professional microcomputer software market is already a big business, and getting bigger at a rapid rate. In 1982, business and professional customers bought approximately $430 million worth of microcomputer software, representing $215 million in publishers' receipts. In 1983, customer purchases are estimated at about $970 million, representing nearly $500 million in publishers' shipments. The growth rate in shipments was 207% between 1981 and 1982, and another 118% between 1982 and 1983. This is a very high rate for an industry that has already grown to significant size.

It should be noted here that the focus of this report is not on microcomputer software in general, but on business/professional software in particular: software designed to accomplish a business or occupational task, whether that task is done at home or at the office. The total software market, including home entertainment software and educational software, is perhaps 50% to 75% bigger than the market described here. However, the economics of entertainment and educational software are very different from business/professional software, and will only be discussed in passing in this report. Most of the sales estimates also refer to independent software companies, rather than to software sales from manufacturers.

FACTORS FUELING BUSINESS/PROFESSIONAL SOFTWARE DEMAND

The rapid growth in business/professional software is being fueled by three principal factors:

1) breakthroughs in software creation and presentation that have led to products which save time--and therefore money--for users. The best example of such a breakthrough is "VisiCalc," an electronic spreadsheet program that is revolutionizing the way certain business calculations and projections are performed.

2) steady increases in the number of personal computer owners. Sales of higher-priced personal computers in the U.S. doubled between 1981 and 1982, from 440,000 to 880,000 units. In 1983 they doubled again, to 1.6 million units. Although sales to individuals--for business and professional as well as for home use--have been the mainstay of the personal computer business until now, massive corporate buying for middle managers began in 1983, and should quickly become a significant part of the overall market. This new trend reflects the widespread adoption of the IBM Personal Computer by major

companies. In recognition of this trend, and to spur it on, IBM in October 1983 announced refinements to the PC, such as the IBM PC XT/370, that make this desktop computer compatible with IBM mainframe computers.

3) an explosion in the number of wholesale and retail businesses carrying microcomputer software for resale. Even in 1983, the number of computer stores was still increasing by at least a 50% annual rate, and perhaps by as much as 100%. The number of software-only stores appears to be growing by 200% to 300% annually, albeit from a small base. And there has been an equally dramatic surge in the number of other retailers carrying microcomputer software: bookstores, record stores, photo and consumer electronics stores and mass merchandisers of all types. This growth in the distribution network creates demand for software products that in the short run may exceed demand by final customers.

All three factors lie behind the present, robust growth of the business/professional software market. But in order to gauge long-term prospects for business/professional software, it is necessary to understand the differences between these forces, which will be discussed below.

Breakthroughs in Software

Breakthroughs in software constitute a kind of technological revolution that in its own way may be as sweeping as the one which made possible the microcomputer. Technological advances provide a solid underpinning for the development of a new business, because they facilitate the substitution of a new product or process for older products and older ways of doing things.

The time span for such substitution is very long, and has traditionally been measured in decades, even though one can glimpse the transforming scope of the change quite early after the introduction of the new technology. The key attribute is that when such substitution begins to gather momentum, new patterns of behavior and spending start to crystallize around the new technology and its applications. In this way the groundwork is laid for a huge new industry comprising not only the primary suppliers of the new product, but all of those providing ancillary products and services, maintenance, training--as well as those who begin to use the primary product to create additional products and services that were never economical before.

One has only to think of the automobile as a new form of transportation, replacing horses; or the telephone as a new medium of communication, augmenting letter writing, telegraph and personal visits; or the television set as a new form of entertainment, relegating movies and radio to lesser roles; or the photocopying machine as a new method of reprography, replacing mimeos, carbon paper and hand copying, to glimpse the possibilities for microcomputer software. Each of these inventions required more than 20 years to become a mainstay of contemporary home or business life. The key point is that for every one of these new technologies, a basic human need existed--transportation, communication, entertainment, copying--even if the specific forms made possible by the new invention had not occurred to people.

The same process may be at work with certain types of microcomputer

software, e.g., word processing and spreadsheet programs. Accountants, bookkeepers, financial managers all needed to do spreadsheet calculations before "VisiCalc." If "VisiCalc" does the job quicker and better, not to mention for less money, there is every reason to adopt it. The adoption process may be slow, because it requires capital investment and retraining, but it marches to the rhythm of an underlying logic.

Growth in the Hardware Base: The Increased Population of Micros

Market growth, the second of the factors, is the easiest to understand because there are so many other analogies in the business world. In this regard, the demand for microcomputer software is seen as comparable to the demand for accessories or supplies created by any new capital or durable good: sales of new homes stimulate demand for furnishings; sales of video cassette recorders create demand for blank and prerecorded tape; sales of cameras lead to demand for film. Hence, it is perfectly appropriate to look at projections for the sale of personal computers to business and professional clients, and to extrapolate the likely demand for software.

The point to bear in mind, however, is that there is often a dynamic to the hardware market--in effect, a built-in cycle--whose nature may elude those counting the numbers as they flash by. Markets have their faddish aspects, even in the business world. If buying personal computers for middle managers by the hundreds or thousands is the chief executive's whim this year, next year's whim could be something entirely different, having do with training, or management by objectives, or quality control. As all-pervasive as the microcomputer revolution may appear to be, a certain portion of it stems from imitation and the desire not to fall out of step with one's peers. These sentiments can help create a boom, even a buying panic, without laying the groundwork for a genuine revolution.

Expansion of the Distribution Network

Expansion of the distribution network, the third factor underlying growth in the business/professional software market, is necessary for the flourishing of a bigger, more developed industry. Indeed, the broadening of distribution channels helps bring about a larger industry, by reaching out to more customers and bringing them in contact with software products. But at any one time, the number of distributors and retailers can be seriously out of sync with final demand. If there are too few resellers, certain retailers earn large profits, products may be in short supply and long waiting time may be required to fill orders. If there are too many resellers, inventory oversupply inevitably ensues, causing pressure on prices and forcing retailers to refrain from buying newer products, or from reordering older ones, until the inventory glut clears. One way that it clears is that unskilled, undercapitalized wholesalers and retailers are forced out of business.

Rapid expansion of distribution, and of the number of resellers, is both the sign of a healthy, growing market, and a danger flag to those who take the risk of creating new products. In the past half dozen years, there have been several examples of new industries that enjoyed booming growth rates for a year or two, only to find that growth come to a crashing halt: the reason is

that much of the early growth consisted of filling a wholesale and retail sales pipeline that took far more product than final customers were able to absorb. Both video cassette program suppliers and video game cartridge publishers learned this painful lesson, the former in 1978-79, the latter in 1982-83. Microcomputer software publishers can ignore this aspect of the expansion in distribution channels only at their peril. Table 1.1 and Figure 1.1 illustrate the different forces at work in the microcomputer software market. Table 1.1 summarizes some of the pertinent characteristics of the three factors described above: technological, market demand and growth in number of resellers. Figure 1.1 shows the different growth rates that characterize these three types of forces. The problem for software publishers is to judge how these three forces will intersect to create the actual growth for business/professional software in the next several years.

The balance of this introduction will be devoted to discussing how microcomputer software is created, who buys it and how it is marketed.

SOFTWARE CREATION

Software is created by individuals or by teams. In either case the development is often long, unpredictable and costly. The cost to a single developer may be foregone income and personal tribulations; the cost to a company employing dozens of programmers--or in today's new jargon, "software engineers"--may be millions of dollars annually in development expenses. Three models of software creation are:

1) the garage model--make it and sell it yourself. In this version, the software author conceives of the program, perseveres until it is finished (or until he abandons the idea as unworkable) and then finds a way to market the product to retailers and to customers. The garage model is often pooh-poohed these days by software companies that have moved out of the founder's basement into office space and that receive checks in the mail everyday from paying customers. Nevertheless, the garage model remains a perfectly viable approach to software creation.

2) the team model, which involves hiring software developers as if they were production workers. The team model is often employed by the very largest software companies, e.g., Visicorp and Microsoft, or by computer manufacturers like Apple and IBM, to get done very substantial projects that are beyond the capabilities of a single author or a very small group. Motivating and managing the team then becomes an important ingredient in success or failure of the software company. So does knowing when to abandon a certain project and to admit that the money sunk into it has been wasted.

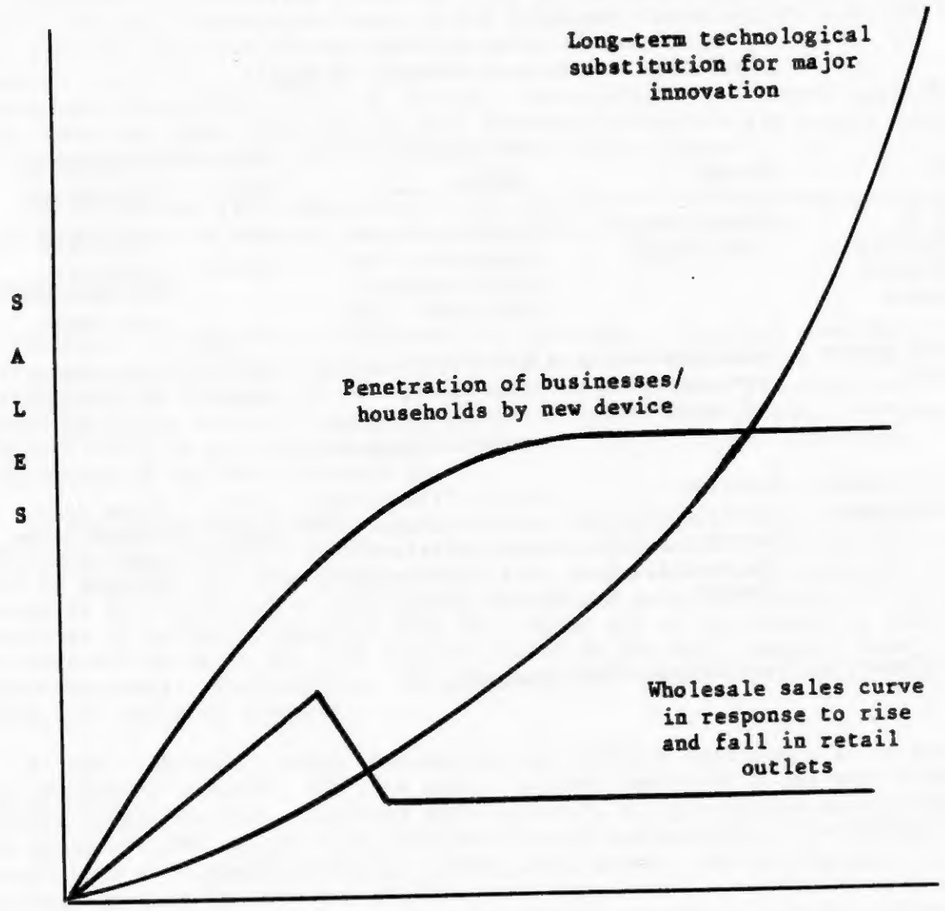
3) the partnership, or publishing, model. In this approach, companies look to book publishing as a precursor of the software business. Just as book publishers rarely put authors on the staff to write books, preferring to deal with them at arms' length as independent contractors, so the argument goes that software publishers shouldn't hire program authors. Instead, they should actively seek outside creators, offering advances, royalties and technical support in exchange for rights to the finished software product.

Table 1.1:
Nature of Forces Driving the
Business/Professional Software Market

Factor	Nature	Manifestations	Time Span	Comparable Industries
Growth in penetration of personal computers	Market adopts new gadget	Purchases by hobbyists, then early adopters, then other users	10 years	Color TV, copiers, dictation equipment
Software breakthroughs	Technological: new patterns of doing work	Significant capital investment, training programs, productivity gains	15-30 years	Telephone, automobile, computer
Growth in number of resellers	Structural: distribution network adjusts to real final demand	Boom in franchising and in independent retailers; pipeline-filling sales gains	2-3 years	Video cassette, video game cartridges

Source: Communications Trends, Inc. analysis

Figure 1.1: Three Possible Growth
Patterns for the Business/Professional Software Business



Source: Communications Trends, Inc.

Few software companies have adopted this model wholeheartedly, although most recognize that they cannot continue to develop all new programs internally. Visicorp (formerly Personal Software) got its start by licensing "VisiCalc" from another company, and MicroPro, Ashton-Tate and Information Unlimited Software, to name a few others, have all acquired programs from outside developers. The most enthusiastic supporters of the publishing model--not surprisingly--have been book publishers trying to break into the software business: John Wiley, Prentice-Hall, CBS, Scholastic, McGraw-Hill and others.

A fourth model for software creation is much more recent. It might be called the venture capital model. In this version, software developers with an idea, or the first draft of a program, get investors to back their new company with enough money to support full-fledged product development and marketing. The most dramatic example was the startup of Lotus Development Corp., which raised $4.6 million in 1982 from a group of investors led by Sevin Rosen Investors Ltd., prior to beginning commercial operations in 1983.

SOFTWARE DISTRIBUTION

Business software can get into the hands of the customer in several ways. It can be sold directly, via direct mail or a sales force--though in the latter case, only to large corporate customers. Or it can be sold to a retail store or dealer for resale to the customer. When selling to retail outlets, the software publisher has a further choice of dealing directly with the retailer to going through a distributor. Yet another distribution channel involves selling programs to computer manufacturers, either in finished form or through a license to reproduce and distribute the title. Figure 1.2 represents the different ways of distributing programs from software publisher to customer.

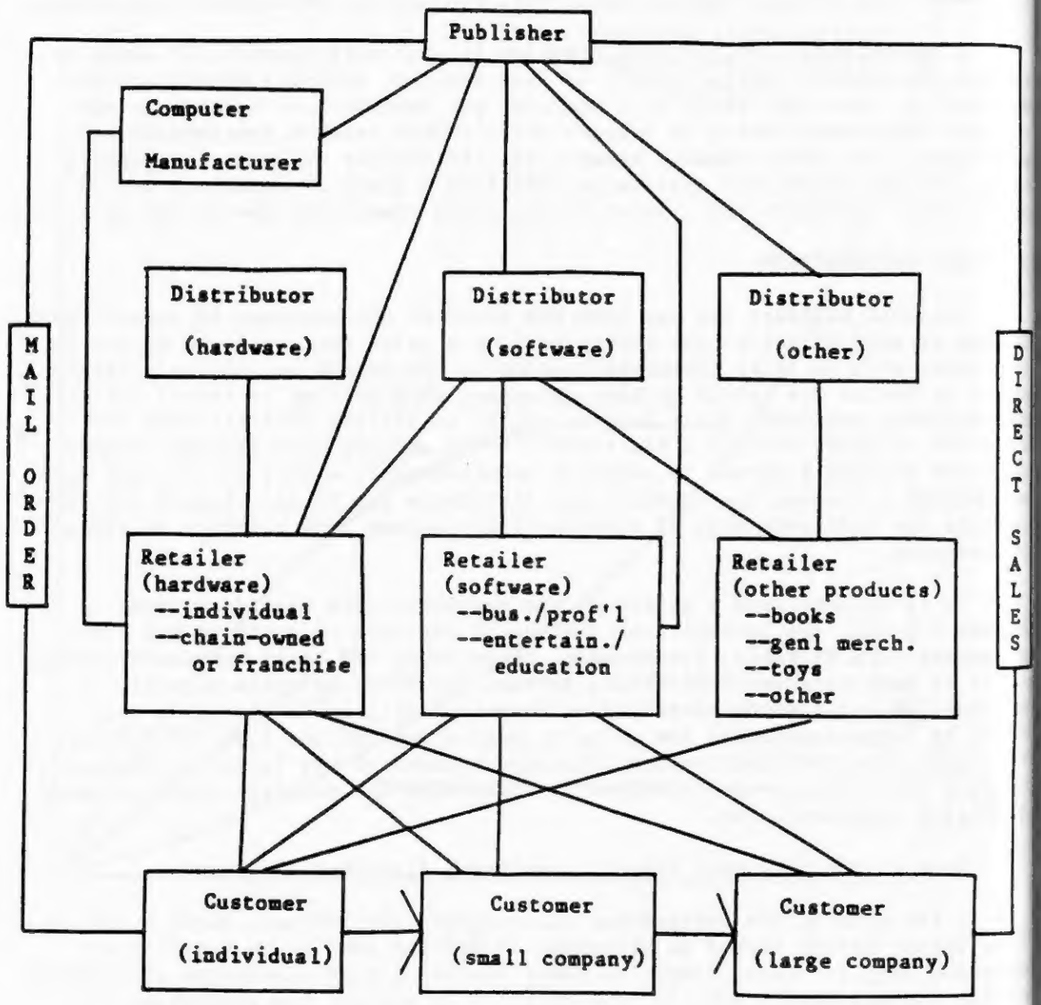
It is evident from a glance at the spaghetti-like welter of lines in Figure 1.2 that the present distribution of software is anything but tidy. A company like MicroPro, for example, sells on an OEM basis to manufacturers; sells in bulk to distributors like Softsel and Micro D; sells directly to national chains like ComputerLand or ComputerCraft; sells through a sales force to large companies; and sells to mail order outlets like 800-Software. This multi-faceted distribution strategy--typical of the larger publishers--carries with it many possibilities for confusion and outright conflict among different intermediaries.

Some of the pertinent issues in software distribution include:

. the role of the independent distributor like Softsel, Micro D and SKU (the latter having signed an agreement in October 1983 to be acquired by McKesson Corp.). These companies today control a high proportion of software moving through retail outlets; the question is whether the distributors' position will weaken as the market grows and matures.

. the prospects for software stores and other new retail outlets. Until 1983, most business/professional software was sold through computer stores. Software stores have now begun to appear at an extraordinary rate, just as retailers from other industries--toys, books, records, photography and

Figure 1.2:
Distribution Channels for Business/Professional Software



Source: Communications Trends, Inc.

consumer electronics, general merchandise--have started to sell software. The question is what will happen to the computer store as a merchandising outlet for software and which, if any of the new contenders can establish themselves in the business. (After attempting to work with mass merchandisers, Softsel in October 1983 decided to withdraw from that sales channel--the demands of mass merchandisers for unlimited returns conflicted with the software publishers' refusal to accept any but limited exchanges.)

. the influence of chain-owned or franchised outlets. National and regional chains like ComputerLand, Entre Computer Stores and Software City are becoming dominant in both hardware and software. These chains will seek to maximize gross margins by buying directly from software puhlishers, thus bypassing distributors. Both publishers and distributors will have to adjust to the economic and marketing power of the chains. These forces will be discussed at greater length in Chapter 4.

SOFTWARE PURCHASERS

The buyers of business and professional software are either companies or organizations (like law or accounting partnerships) or individuals using the software at home. Even when an individual is the customer, the software is being bought for a business or professional purpose. Libraries and colleges--important markets for professional books and magazines--are not, as yet, buyers of business and professional microcomputer software.

Although individuals and small companies have been the mainstay of business/professional software sales up to the present, the market is evolving in two directions. On the one hand, significant volume purchases by large organizations are beginning to appear. On the other hand, the gradual decline in average software prices is bringing software within reach of ever more individual purchasers and ever smaller businesses. Judgments about which category of purchasers represents the best opportunity will strongly influence how a software company promotes its titles.

Table 1.2 shows three different ways of looking at the business/professional software market: as an individual market composed of, say, 10% of the 83 million households in the country; as a small business market, composed of more than 4 million establishments; and as a large company market, consisting primarily of the Fortune 1000 companies that employ 24 million people.

FUTURE OF THE BUSINESS/PROFESSIONAL MARKET

The future of the business/professional microcomputer software market will be shaped in large measure by answers to the following questions:

1) How far will penetration of personal computers reach? Will such computers will limited to a couple of percent of U.S. households, and to perhaps 10% of the managerial and professional workers in the U.S.? Will the reach be universal--one per household, one per knowledge worker? Or will penetration be somewhere in between?

Table 1.2:
Different Ways of Looking at the Business/Professional Software Market

Purchasing entity	Number	Target penetration	Target population or total employment
Households	83,000,000	10%	8,300,000
Small businesses*	4,500,000	50%	22,250,000
Big business (Fortune 1000)**	1,000	100%	24,000,000

*Companies employing fewer than 100 people.
**Total of the Fortune 500 largest industrial and 500 largest service companies

Source: Communications Trends, Inc., based on data from U.S. Census, as reported in Statistical Abstract of the U.S. and Fortune Magazine

2) Will software creators develop new breakthroughs, comparable to those in spreadsheets, data base and word processing programs? Or will new programs be mainly derivatives or imitations of those previously introduced.

3) Will vertical software markets take root and grow to significant size? Although the opportunity is present in markets such as law, accounting, medicine and in industries like retail trade, insurance, banking and consulting, these submarkets are still small compared to the market for general-purpose software.

4) How quickly will prices come down for business/professional software products? Will declining prices destroy profits for software companies and choke off the flow of new programs?

5) Will software publishers work out ways of dealing with creators that assure a steady procession of new products, as in the book publishing business? Or will they be at the mercy of the fits and starts of the creative process, and thus subject to wide swings in revenues and profits from one year to the next?

6) How will retail and distribution channels evolve to get software to customers who want it? Will direct sales to corporate customers become feasible?

7) Will rampant piracy impede the development of the software business and prevent publishers from getting a fair return on their investment?

8) Will new technology, such as the teledistribution of software, take hold and radically alter the structure and economics of the software business?

Many of these questions have no answers today; answers will only come as the industry grows and matures. However tempting it would be to wait for answers until the industry is better defined, software companies know that they can do so only by taking a chance on missing participation in this new market. Even more than with other businesses, waiting for certainty in the software field entails a greater risk than does acting with imperfect information. This report aims to be of use to publishers, creators and distributors by giving answers to questions where it can, and by suggesting how to arrive at answers where it cannot.

[redacted]

Three principal forces driving the business/professional software market are breakthroughs in the quality of software; the steady expansion in the base of personal computer owners; and the rapid growth in the distribution network and number of resellers. The intersection and relative strength of these forces will determine the future growth of software sales.

Problems of how to create software economically and how to distribute it efficiently lie at the heart of the industry's situation in 1983 and 1984. Software companies must evaluate which model of software creation and which method of distribution fit their own resources and type of products.

SIZE AND STRUCTURE OF THE BUSINESS/PROFESSIONAL MICRO SOFTWARE MARKET

Between $820 million and $1 billion worth of business/professional microcomputer software, at retail, will be sold in 1983. The corresponding figure in 1982 was probably $430 million. Although these figures are impressive, they represent customer purchases rather than publishers' receipts. Because of the high discounts granted to distributors and retailers of business/professional software, most publishers sell their programs at an average of about 50% of list price. In terms of publishers' receipts, then, the market was about $215 million in 1982, growing to $468 million in 1983.

The estimated growth rate comes to 118% in 1983, down from 207% in 1981. Nevertheless, the growth in dollar sales for software publishers is about $250 million in 1983, compared to $145 million the previous year. The growth rate in 1984 is forecast to be considerably lower--between 67% and 88%. In dollar terms, however, the increase in 1984 will be greater than the increase in 1983 even at the lowest growth rate that is forecast: $275 million vs. $253 million.

Table 2.1 displays these estimates, which are the result of analysis of the results of publicly owned software companies, interviews with privately owned software publishers and appraisal of market estimates compiled by other companies. Nevertheless, they are only estimates. Anyone who pretends to certainty about the present size or future growth of the software market is deluding either himself or those whom he purports to inform. For this reason, the estimates for customer purchases and customer receipts for 1983 and 1984 are shown as a range of possible values, rather than as single numbers.

Table 2.2 presents revenue estimates for a number of the leading publishers and distributors of business and professional micro software. The combined growth rate of these companies, 147% in 1982 and an estimated 148% in 1983, was the most important factor in arriving at the estimates of overall market growth shown in Table 2.1

SIZE AND GROWTH OF THE PERSONAL COMPUTER HARDWARE MARKET

The size of and growth rate for business and professional software must be looked at in conjunction with the growth for higher-priced personal computers--those selling for more than $2000. It is the customers for these

Table 2.1:
Estimated Size and Growth of the Business/Professional Software Market, 1981-84

	dollars in millions						
	1981	1982	% Inc.	1983	% Inc.	1984	% Inc.
CUSTOMER PURCHASES							
High				$1,000		$1,880	88%
Median	$140	$430	207%	936	118%	1,638	75%
Low				820		1,370	67%
PUBLISHER RECEIPTS							
High				500		$940	88%
Median	$70	$215	207%	468	118%	819	75%
Low				410		685	67%

Note: This table should be read in conjunction with Table 2.2 which follows. The key assumptions are that the nine leading software publishers account for most of business/professional software sales, and that publishers' receipts are approximately half of customer outlays, given prevailing discounts of 50% or higher from list price.

Source: Communications Trends, Inc. estimates

Table 2.2:
Estimated Revenues for Leading Business/Professional Microcomputer Software Publishers and Distributors

	(in millions)				
Company	1981	1982	1983	% inc., 1981-82	% inc., 1982-83
Softsel	$ 8	$ 35	$ 85	338%	143%
Micro D (1)	12	25	75	108%	200%
Microsoft (2)	16	34	70	113%	106%
Visicorp	20	35	60	75%	71%
MicroPro (3)	5	22	45	340%	105%
Digital Research (3)	15	22	38	47%	73%
Ashton-Tate (4)	2	10	30	400%	200%
Lotus	0	0	48	NM	NM
Peachtree	3	9	24	200%	167%
Sorcim (5)	NS	4	10	NM	150%
Software Publishing (6)	NS	4	10	NM	150%
Total, 11 companies	81	200	495	147%	148%
Total, 9 publishers	61	140	335	130%	139%

NS = not significant
NM = not measurable

1. Fiscal year ending October 31. 2. Fiscal year ending May 31, but figures are for calendar years 1981, 1982 and 1983.
3. Fiscal year ending August 31. 4. Fiscal year ending January 31, 1982, 1983 and estimated 1984. 5. Fiscal year ending June 30.
6. Fiscal year ending September 30.

Source: Company reports, Communications Trends, Inc. estimates.

computers, consisting of self-employed professionals, of small businesses, or of departments within large companies, that buy almost all of the business and professional microcomputer software.

The U.S. market for higher-priced personal computers was about 900,000 units in 1982 and will grow to an estimated 1.6 million in 1983, worth about $7.5 billion at retail, and perhaps $5.5 billion in manufacturers' sales. Table 2.3 presents estimates of the growth in the personal computer market in the U.S. since 1981.

Table 2.4 presents the estimates and forecasts of two leading market research companies, International Data Corp. and Future Computing, Inc. The estimates in Table 2.3 simply reflect a more conservative, more sober assessment of market size and growth. The reason for the conservative approach is that exuberant forecasts of market growth have a way of not coming to pass. (For example, it appears that Future Computing's estimate of the size of the computer software at retail may be overstated by 33% to 40%. Future Computing estimates a total software market--business/professional, educational, home--of $2.1 billion in 1983, whereas a more conservative estimate would probably be $1.3 billion to $1.5 billion.)

One point that all researchers agree on is how quickly IBM has come to dominate the business market with its PC. Introduced only in August 1981, the IBM PC was third behind Apple and Tandy in unit sales in 1982, but will challenge Apple for the top spot in units in 1983, while clearly leading in dollar revenues.

Table 2.5, based on estimates supplied by Future Computing, shows the importance of the three largest manufacturers. Between them they account for an estimated 2.7 million personal computers shipped through December 31, 1983. Although Apple leads in total number of computers shipped, with Radio Shack second, IBM's percentage of the installed base is already 23%, and growing daily. At the end of 1982, by comparison, IBM's share would have been under 15%. It is the rapid growth rate in IBM shipments, its inability to keep up with the strong demand and its commanding position in the business market that have caused independent software publishers to direct their efforts so heavily toward IBM PC and PC-compatible computers in developing new programs.

After IBM, Apple and Tandy come Hewlett-Packard and Digital Equipment Corp. (DEC). The two minicomputers manufacturers, though slow to recognize the appeal of the personal computer, have since jumped in with both feet, introducing a variety of models and backing them with unaccustomed advertising and promotional support.

Nevertheless, sales at DEC, at least, have been slower than expected. The world's second largest computer maker reported a 72% earnings decline in the quarter ended September 30, 1983; slow sales of its personal computer models were partly to blame.

Beyond these five companies, it is difficult to see what other computer manufacturers will be able to survive in the personal computer field, unless

Table 2.3:
Estimated Growth in Personal Computer Sales
in the U.S., 1981-83

	1981	1982	1983
Unit sales	440,000	900,000	1,600,000
Manufacturers' sales (millions)	$1,500	$3,300	$5,500
Customer purchases purchases (millions)	$2,500	$4,500	$7,500

Source: Communications Trends,Inc., based on company financial reports, industry association figures, independent market research reports.

Table 2.4:
Two Independent Estimates of Personal/Desktop
Computer Industry Sales, 1982 and 1983

	-----in millions-----	
	1982	1983
International Data Corp.*		
Worldwide sales	$5,400	$ 9,800
U.S. sales	4,100	7,600
U.S. customer purchases	5,600	10,500
Future Computing**		
Worldwide sales	5,100	8,400
U.S. sales	3,700	5,900
U.S. customer purchases	6,100	10,000

*U.S. customer purchases estimated by Communications Trends, Inc. on basis of 28% gross margin at retail.
**Customer purchases include estimated software purchases of $1.08 billion in 1982 and $2.1 billion in 1983.

Source: International Data Corp., Future Computing news releases; additional estimates by Communications Trends, Inc.

Table 2.5:
Estimated Installed Base for Three Leading
Personal Computer Manufacturers, December 31, 1983

Manufacturer	Installed Base	% of Installed Base
IBM		
IBM PC	550,000	
IBM PC XT	65,000	
Sub-total	615,000	22.7%
TANDY/RADIO SHACK		
Model 4 (incl. I, III)	750,000	
Model 2 (incl. 12, 16)	140,000	
Sub-total	890,000	32.9%
APPLE		
II, II+, IIe	1,100,000	
III	100,000	
Lisa	10,000	
Sub-total	1,200,000	44.4%
Grand total, 3 largest manufacturers	2,705,000	100.0%

Source: Future Computing, Inc.

they produce IBM-compatible machines. Companies in this category include Eagle, Compaq, Corona and several of the Japanese manufacturers. The fate of Osborne Computer, which filed for protection under Chapter 11 of the bankruptcy law in September 1983, and the heavy losses and layoffs at Victor Technologies in late 1983, illustrate vividly the perils in the market for small manufacturers that are not making IBM-compatible PCs. It is not surprising that remaining independents like Kaypro and TeleVideo are scurrying to offer models that are compatible with the IBM PC.

BUSINESS PROFESSIONAL SOFTWARE AND OTHER BUSINESS SERVICES

Business and professional software is part of a wider business and professional services industry. To put this field in perspective, it is valuable to compare spending on microcomputer software with spending on all outside business services, including legal, accounting, engineering and data processing services. This comparison is the focus of the next section.

Business Services

American business spends upwards of $140 billion per year on outside business and professional services, ranging from consultants and architects to computer service bureaus and the purchase of copyrighted information. The major categories of services represented an estimated $112 billion in receipts in 1982. These services and their dollar volumes are as follows:

- legal services, $22 billion;
- accounting and auditing services, $10 billion;
- management, consulting and public relations, $19 billion;
- engineering/architectural/surveying, $31 billion;
- data processing, $21 billion;
- published and copyrighted information services, $9 billion.

Table 2.6 summarizes the major categories of professional and information services and their revenues, and shows how the present size of business/professional microcomputer software compares to the overall total.

The relevance of these services to the microcomputer software field is two-fold. First, they are all professional information services whose purpose is to help carry out the managerial or technical functions of the business enterprise. The nature of the service performed--information, research, calculation, consulting, expert opinion--has much in common with the service performed by business applications software.

Second, all these services--with the exception of published information--are labor-intensive, whether performed inside the corporation by a company's own staff, or by outside suppliers. They involve the time of highly paid professional: lawyers's fees of $150 an hour and consultants' fees of $1000 per day are all too common. Any method of substituting lower-priced labor for higher-priced labor, or doing away with labor at all, holds the promise of real savings to companies.

And it is this promise that explains the fundamental appeal of much business applications software. Accounting packages that permit managers or assistants to enter transactions on a daily basis and get automatically generated trial balances, income statements and balance sheets can cut employment in the accounting department and reduce the fees paid to outside accountants and auditors.

Other software is aimed at the professional firms themselves, e.g., programs that handle the administrative recordkeeping for legal offices or for consulting engineers. To the extent that such software reduces costs, the result will either be increased profits for the suppliers of a services, or, because of price competition, cost savings passed on to the ultimate client.

Table 2.6:
Size of the Business/Professional Information Services Market
in Comparison to the Market for
Microcomputer Software

Service Category	Receipts in millions 1982	1983
Legal services	$ 22,000	
Accounting, auditing	10,000	
Management, consulting, public relations	19,000	Not separately projected
Engineering/architectural	31,000	
Data processing	21,000	
Published/copyrighted information	9,000	
Total, selected business services	$112,000	$123,000
Business/professional microcomputer software	215	468
Software as percent of total	.2%	.4%

Source: Statistical Abstract of the U.S., U.S. Industrial Outlook, Communications Trends, Inc.

In this sense, the target for microcomputer software companies is far larger than the present software market indicates. It is even greater than the spending on all data processing and computer activities, which is to be discussed in the next section. Whereas micro software suppliers talk fondly of the day when their markets will reach multi-billion dollar proportions, true visionaries could have far larger sums in mind. Should microcomputer software increase its share of the total business information services market from the present one half of 1% to even 5%, the activity would be worth $6 billion in supplier receipts, or more than 10 times the 1983 level.

DATA PROCESSING SERVICES

Though it is interesting to speculate on how microcomputer software fits into the wider business services market, the segment of business spending that bears the closest scrutiny is that of computer/data processing expenditures. Such expenditures encompass: internal salaries, capital spending and operating costs for the data processing department; and purchase of outside services like mainframe or minicomputer software, consulting, batch processing or online processing.

Figures on data processing expenditures come from several sources: the U.S. Commerce Department, the Association of Data Processing Service Organizations (ADAPSO) and individual research firms like International Data Corp. (IDC), InfoCorp and Dataquest.

Figures on the overall size of data processing expenditures and on purchases of personal computer hardware and software as a percentage of this total, are shown in Tables 2.7 and 2.8

Total user spending on computer equipment, services, salaries and overhead will reach $86 billion in 1983, according to the annual forecast compiled by IDC. Of that sum, the largest single portion, $36 billion or 42%, will go for salaries of computer department/management information systems employees. The next largest sum, or $28 billion, will go for hardware, with spending on software and services estimated at $7 billion.

Seen against these enormous outlays, the sums being spent on personal computer hardware and software are still modest--but they are growing rapidly as a percentage of the whole. From only 2.9% in 1981, personal computer outlays will reach 9.9% in 1983. The last column of Table 2.8, projections for 1986, shows what the relationship between personal computer spending and total computer spending would be under the following assumptions:

1) total computer spending rises at 17% per year, compounded; and

2) personal computer hardware and software purchases rise at 45% per year, compounded.

The result would be that personal computer spending would constitute 18.8% of all computer outlays in 1986, having grown to the enormous sum of $26 billion. Although this amount is staggering even in 1986 dollars, it is still to the point to note the following qualification: Under the

Table 2.7:
U.S. Computer Spending by Data Processing Users, 1981-83

Category	1981	1982	1983
	——in millions——		
Hardware	$20,620	$24,275	$27,985
Software/services	4,545	5,570	7,020
Salaries and staff	29,430	32,375	36,260
Other	11,395	12,845	14,685
Total	65,990	75,065	85,950

Source: International Data Corp.

Table 2.8:
Personal Computer Purchases Related to All Computer Spending, 1981-86

Category	1981	1982	1983	1986P
	——————in millions——————			
All computer spending	$65,990	$75,065	$85,950	$138,000
Personal computer hardware/software	1,940	5,000	8,500	26,000
as percent of total	2.9%	6.7%	9.9%	18.8%

Note: 1986 projections based on 17% growth per year in total spending and 45% per year in personal computer spending.

Source: International Data Corp., Communications Trends, Inc.

assumptions shown above, the increase in all other computer outlays between 1983 and 1986, or about $35 billion, would be nearly one and a half times the size of personal computer hardware and software purchases in 1986.

Another interesting comparison is to see how microcomputer software revenues stack up against revenues of all computer software, services, systems and processing companies. An annual report on the revenues of these companies is produced for ADAPSO by Input. Table 2.9 shows the ADAPSO/Input estimates for 1981 and 1982, along with projections for 1983 that were calculated for this study, based on ADAPSO's five-year growth rate projections. Of the $26.4 billion in computer services revenues recorded in 1982, only about 20% went to software products companies. These companies, however, had by far the highest growth rate of any segment: 43% in 1982, vs. 20% for the next fastest growing segment (integrated systems companies) and 18% for the computer services companies overall.

To compare revenue growth for microcomputer software, as is done in Table 2.10, it is necessary to use figures for publishers' receipts, rather than customer outlays for software. The median estimate for such receipts in 1983 is $468 million (Table 2.1), which represents only 6.4% of all software products revenues, and a barely measurable 1.5% of all computer services [redacted].

Even if microcomputer software sales were to grow at 70% per year compounded through 1986, vs. a growth rate of 40% for all software revenues and 20% for all computer services revenues, the microcomputer software business would still remain of modest size relative to these larger industries. The results of this exercise are seen in the column headed "1986P" in Table 2.10. Under these assumptions, micro software revenues would account for 11.5% of all software revenues, and 4.1% of all computer services revenues.

Table 2.11 extends the hypothetical exercise one more step by asking: what growth rate is required for microcomputer software publishers, if microcomputer software sales are to reach 15%, 20% and 25% of total software revenues in 1986? The answer is that to reach 15% of total software revenues, micro software sales would have to grow at 85% per year; for them to reach 20% of the total they must grow at 105% per year; and to reach 25% of the total they must grow at 120% per year.

The calculations performed in Table 2.11 bring us no closer to knowing what the actual growth rate will be, but they may be useful in forcing readers to question their own underlying assumptions. The projections offered at the start of the this chapter assume a maximum growth rate in 1984 of 88%--and the rate of growth should tail off in succeeding years. Whatever the prospects for microcomputer software, therefore, it will not conquer the computer services world in the next three years,

SUMMARY

The business/professional microcomputer software business grew at a very rapid rate between 1981 and 1983, and will be worth nearly $1 billion in customers' purchases in 1983, and about half that amount in publishers'

Table 2.9:
Computer Services Industry Revenues, 1981-83

Segment	1981	1982	% chg.	1983P	% chg.
	------dollar figures in millions------				
Processing services	$11,250	$12,500	11%	$14,250	14%
Software products	3,700	5,300	43%	7,300	38%
Professional services	4,500	5,300	18%	6,250	18%
Integrated systems companies	2,750	3,300	20%	4,250	29%

Source: Association of Data Processing Service Organizations/Input

Table 2.10:
Microcomputer Software Revenues vs.
All Computer Software and All Computer Services

Segment	1981	1982	1983	% chg., 1981-83	1986P
	----------dollar figures in millions----------				
Microcomputer software	$ 70	$ 215	$ 468	569%	$ 2,300
All software	3,700	5,300	7,300	97%	20,031
All computer services	22,400	26,400	32,050	43%	56,659
Micro software as percent of:					
all software	1.9%	3.9%	6.4%	237%	11.5%
all computer services	.3%	.8%	1.5%	400%	4.1%

Source: Communications Trends, Inc.; ADAPSO

Table 2.11:
Growth Rates Required for Microcomputer Software Sales,
1983-86, if Micro Software is to Reach
15%, 20% or 25% of Total Software Market

Percent of total software Business to be attained	Total micro software revenues required	Compound annual growth required
15%	$3.0 billion	85%
20%	$4.0 billion	105%
25%	$5.0 billion	120%

Source: Communications Trends, Inc. calculations.

receipts. Nine major software publishers account for the lion's share--nearly two thirds--of the industry total, and their combined sales grew at 152% between 1981 and 1982, and by an estimated 133% between 1982 and 1983.

The growth rate for microcomputer software will be influenced by, and in turn will exert its own influence on, trends in the personal computer hardware industry. Brisk buying of microcomputers by large corporations, the continued appeal of personal computers to small business and self-employed individuals, and growing dominance by IBM and its PC, are the current trends in this highly dynamic, but volatile market.

To put the microcomputer software field in perspective, it should be compared to such wider markets as the broad business/professional services market, representing $140 billion in annual receipts, and the computer services industry, with about $32 billion in 1983 revenues. When looked at from this vantage point, the business/professional microcomputer software market appears minuscule, but its opportunities for growth look all the more enticing.

THE NATURE OF AND DEMAND FOR SOFTWARE

Though software has become one of the most commonly used terms in the computer field, it actually means many different things at different times. The types of software range from systems software that enables the computer to carry out its functions to applications software used to accomplish specific tasks. The machines on which software operates include mainframes, minis, desktop personal computers and inexpensive home computers. And the markets for software range from consumers who want entertainment to schools that want instructional programs to businesses that want assistance in accounting, sales forecasting, payroll records and inventory management.

SYSTEMS SOFTWARE

Systems software is software that enables the computer to carry out its information storage, processing and retrieval functions: entering data, commanding its storage, display or retrieval, causing it to be printed out, copied, communicated or eliminated. The operating system has often been called the traffic cop of the computer system, ordering and directing the flow of data from one device to another.

Since every computer needs an operating system to function, the market for operating systems is obviously equal to 100% of the microcomputers sold. Usually, however, the choice of the operating system is made by the computer manufacturer, not by the computer purchaser. Whereas the CP/M operating system created by Digital Research Corp. was the leader for 8-bit microcomputers, the MS-DOS operating system from Microsoft Corp. moved into the lead when IBM's 16-bit PC was introduced. Digital Research countered with its CP/M-86 system, and more recently with its concept of the CP/M Applications Library, which takes bestselling applications programs and provides them on diskettes that contain CP/M (or MS-DOS) built in. Nevertheless, DRC has yet to regain the ground lost to Microsoft.

There are still other operating systems, such as Unix, developed by Bell Labs, and extremely popular for minicomputers; a variation of Unix known as Xenix is available for TRS-80 microcomputers. However, no other operating system has yet to demonstrate mass customer appeal.

Because the choice of the operating system is largely up to the computer manufacturer, there are unlikely to be a large number of suppliers of non-compatible operating systems at any given time. To pursue the traffic analogy

a step further, railroads might choose between two or three different track widths, but there is no way they would entertain a choice among dozens. Just as standardization on a very few alternatives is necessary for the trains to run, so standardization on one or a very few operating systems is necessary for personal computer manufacturers, if they are to get suppliers of the other kind of software--applications software--to develop programs for their machines.

The systems software market is directly tied to the number of microcomputers sold, and because the operating system is a must, its cost has to be kept modest--if indeed it is itemized separately. For the IBM PC, for example, the cost of DOS, the disk operating system, is $40, or about 1.3% of the $3000 that the average PC buyer will spend on his initial system. The DOS disk and operating manual carry the IBM name but are licensed from Microsoft. Although the terms of the license are not known, one might speculate that Microsoft receives a 25% royalty on every copy of DOS sold, which effectively means on every IBM PC that is sold. Assuming the sales curve for the IBM PC and for other 16-bit microcomputers using MS-DOS looks as it does in Table 3.1, we can gauge the revenue potential from this spectacularly successful systems software product: in 1983 alone it could represent 850,000 units, generating customer payments of $34 million and supplier royalties of $8.5 million.

Languages

Languages are the organized systems of words, phrases, symbols and machine codes that permit a computer to receive and process program instructions. A language is itself a piece of software enabling other software to be created and communicated. A programming language must be compatible with the operating system, and, in turn, applications programs must be written in the version of the programming language that a given computer will accept.

BASIC is the best known of the programming languages, and the one that computer beginners usually learn. It has become a de facto standard for both 8-bit and 16-bit microcomputers; a version of BASIC is often included in the price of the computer, whether it is a business model or a low-priced home unit. Thousands of commercial BASIC programs are available, many of them published in computer books for retyping by the reader into his own computer. (A typical such book is Stanley Trost's "Useful Basic Programs for the IBM PC, published by Sybex for $8.95.) Such programs range in length and complexity from a dozen to hundreds of lines of code, and although the task of typing them in is laborious, the cost per program to the user is extremely low--less than a dollar per program.

However, very few of the major applications software programs are written in BASIC. The reason is that BASIC runs slowly, takes up more memory and is generally more cumbersome for the professional programmer to use, than other computer languages. Nevertheless, Advanced BASIC (BASICA) is a standard feature on all IBM PCs. The supplier, Microsoft, also offers a BASIC Compiler at $300 that enables the programmer to convert his BASIC program into machine language in order to achieve faster processing.

Table 3.1:
Systems Software Market Illustration:
The Market for MS-DOS

	1981	1982	1983	1984
IBM PC units	60,000	200,000	500,000	1,000,000
Other 16-bit PCs	40,000	200,000	350,000	600,000
Annual total	100,000	400,000	850,000	1,600,000
Cumulative	100,000	500,000	1,350,000	2,950,000
Annual value of MS-DOS @ $40	$4,000,000	$16,000,000	$34,000,000	$64,000,000
Royalties to supplier	$1,000,000	$ 4,000,000	$ 8,500,000	$16,000,000

NB: Figures are for the purpose of illustration and do not represent estimated or forecast sale volume.

Source: Communications Trends, Inc. calculations

Table 3.2:
Representative Suppliers of Systems Software:
Operating Systems and Languages

Company	Typical Products
Microsoft	MS-DOS, BASICA, BASIC Compiler
Digital Research	CP/M, CP/M-86, PL/1 Compiler
IBM Systems Prod. Div.	FORTRAN, COBOL, IBM PC Macro Assembler
Lifeboat Associates	Lattice C Compiler
SofTech Microsystems	BASIC Compiler
The Software Works	FORTH, Level I

Source: Communications Trends, Inc., from product and vendor catalogs

Other choices among languages include:

. FORTRAN, one of the oldest computer languages, originally designed for IBM mainframes. It is available for the IBM PC from IBM for $350.

. COBOL, another mainframe language that is still widely used in common business applications (e.g., payroll records). IBM sells it for the PC for $700.

. Pascal, a teaching language created by Nicklaus Wirth, a Swiss computer scientist. It is highly structured and thus facilitates the transposition of an applications program from one micro to another. SofTech created the UCSD Pascal version, and Microsoft sells a Pascal compiler.

. PL/I, originally created at IBM to combine features of COBOL, FORTRAN and BASIC. Digital Research supplies a version for the IBM PC for $700.

. APL, also created at IBM and known for its conciseness and the ease with which it handles certain mathematical functions.

. C, a language developed at Bell Labs by Brian Kernighan and Dennis Ritchie to go with the Unix operating system. It has become popular with systems programming professionals because of its high degree of structure and its speed of processing. A popular compiler, "Lattice C Compiler," is sold by Lifeboat Associates, New York.

. FORTH, a language made up of a few kernel words, written in assembly language and known for its speed and compactness. The "MMS FORTH System V2.0" is available for the IBM PC from Miller Micro Computer Services, Natick, MA.

. Assembly language, the machine language that is designed for the specific features of a microprocessor--for the IBM PC and other 16-bit computers, this is the Intel 8088/8086 microprocessor. The "IBM PC Macro Assembler" is available from IBM for $100. An applications program written in assembly language, such as Lotus' "1-2-3," will run very quickly--up to 350 times faster than a program written in BASIC, for example--but developers will find it more difficult to transpose the program to personal computers using a different microprocessor.

Table 3.2 lists publishers some of the better known operating systems, compilers and languages.

APPLICATIONS SOFTWARE

Applications programs are those designed to accomplish a specific task, or set of tasks: keeping financial records; calculating commissions, salaries or taxes; drawing charts and graphs; valuing stock and bond portfolios. Some of the most popular categories of applications programs for microcomputers used in the business/professional market are:

. electronic spreadsheets;

. word processing (this is often categorized as utility program rather than an applications program, but for the purpose of this chapter, word processing has more in common with applications programs as described and analyzed here);

. file or data base management;

. communications;

. graphics.

The market for applications programs is universal in the following sense: any business or professional computer owner will need one or more applications programs in order to make his computer do any real work, unless he is willing to write all his own programs. Not every computer will need even two or three of the main programs, however.

One of the driving forces behind the personal computer revolution of 1979-82 has been the development of applications programs that were never before available at such low cost. All cost comparisons are relative: a $495 word processing program may seem terribly expensive compared to a $30 game cartridge, but it is unmistakably cheap compared to the purchase of a dedicated word processor for $15,000, or to the hiring of a full-time typist. Microcomputer applications software is also cheap compared to mainframe or minicomputer software acquired under license, or compared to the cost of hiring staff programmers or an outside service bureau.

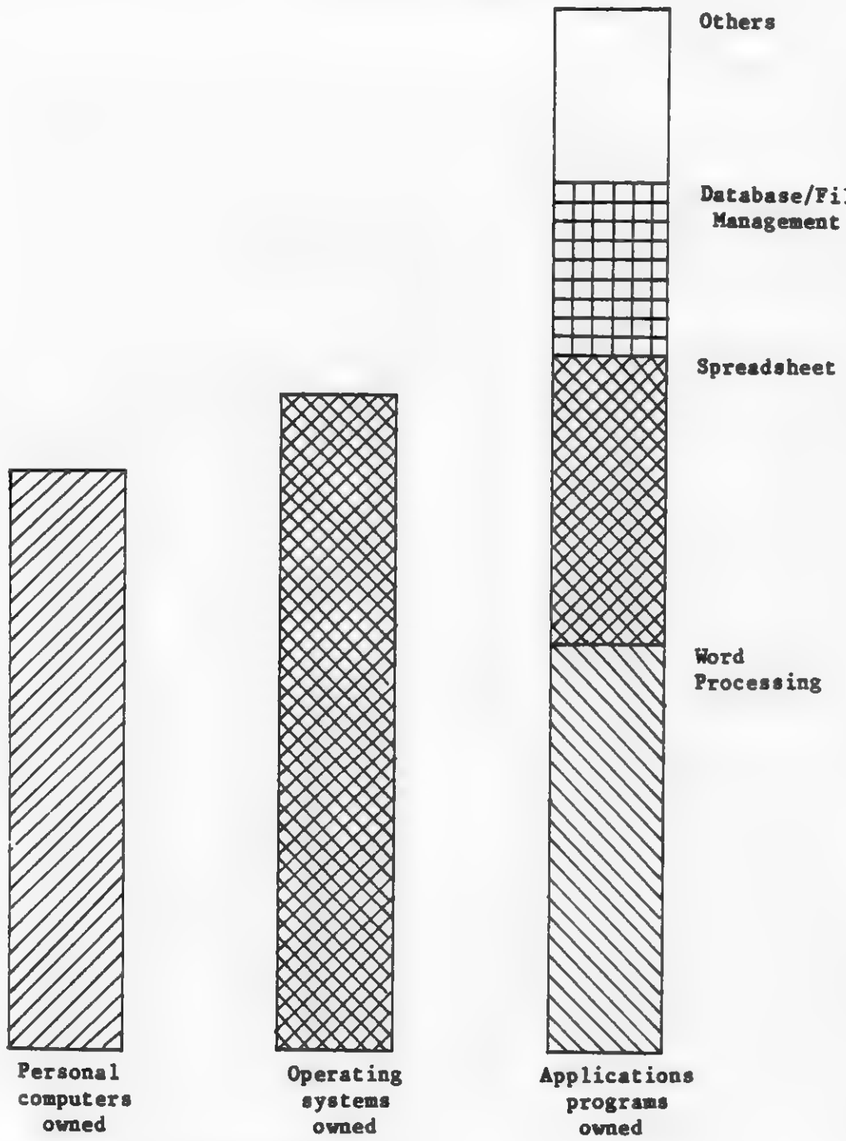
Figure 3.1 shows one way of looking at the applications software and operating systems market in relation to the population of personal computer owners. Even the bestselling category of applications software, spreadsheets, has been bought by fewer than 100% of personal computer owners. But together, the sales of spreadsheets, word processing and data base/file management programs total well over 100% of the owners.

The bundling of applications software with computer hardware has gone a long way toward increasing the sales appeal of the computer and to boosting the percentage of computer owners who use applications programs.

In just a few years, unit sales of bestselling applications programs have reached impressive quantities, given the still-small penetration of personal computers among the population at large. The two bestselling titles, "VisiCalc" and "WordStar," have sold 700,000 and 600,000 units respectively. (Visicorp, publisher of "VisiCalc," has said there are more than 1 million users of "VisiCalc," which may refer to multiple users of a single program, or to copies sold by manufacturers and other OEM licensees.)

The third bestselling title, "SuperCalc," (in various versions) had sold 350,000 copies as of fall 1983, although many of these units--probably more than half--have come through OEM sales. Close behind is the "PFS:File" program from Software Publishing Corp., with 250,000 units. And fifth is "dBASE II"

Figure 3.1:
Market for Applications Programs and Operating Systems
in Relation to Population of
Personal Computer Owners



Source: Communications Trends, Inc.

from Ashton-Tate.

Table 3.3 displays the unit sales, customer purchases and estimated publishers' receipts for each of these bestselling programs, as well as for a sixth, "1-2-3" from Lotus Development Corp. Sales of "1-2-3" have passed the 100,000 mark in nine months of 1983, making it the fastest selling business/professional software title in that year. Lotus Development Corp. had more than $29 million in revenues between January 1 and September 30, 1983.

The unit sales of these bestselling programs are extremely high for published business/professional information products; only a handful of business magazines, for example, have a circulation that exceeds 250,000, and not more than one or two business books a year sell more than 100,000 copies in hardcover. Table 3.4 shows what readers will pay in 1983 for six bestselling business/professional information products, including Business Week, the Wall Street Journal, "In Search of Excellence" (a bestselling book by Thomas Peters and Robert Waterman, published by Harper & Row), "WordStar" and "1-2-3."

Unit sales of the bestselling microcomputer programs became all the more impressive when one considers the small population of personal computer owners. The universe of potential subscribers to the Wall Street Journal or Business Week consists of 83 million households, so revenue per potential customer averages $2.25 and $.30 respectively. If one assumes that the potential customers for "1-2-3" and "WordStar" are limited to perhaps 3 million personal computer owners, then revenue per potential customer is considerably higher--$23.33 and $25 respectively.

However, very few business/professional programs are able to sell in these spectacular quantities. And as the number of all business/professional programs grows rapidly into the many thousands, the odds against a runaway bestseller become greater all the time. In no other field of business/professional publishing is there such a disparity between the spectacular performance of a few blockbusters, and the very ordinary or disappointing sales of the average program.

Number of Programs by Major Machines

One of the reasons for the strong popularity of the Apple II and its successors, the II+ and the IIe, has been the existence of thousands of applications programs available for that machine. With the arrival of the IBM PC and its predominance in the business world, many software companies have switched to releasing programs first in the IBM PC format. An industry directory, "PC Clearinghouse Software Directory" published in early 1983 by PC Clearinghouse Inc. (Fairfax, VA) listed more than 21,000 software titles for more than 200 microcomputers. As of late 1983, PC Clearinghouse had a total program count of 35,000, a 50% increase in less than one year.

The 1983 edition listed 2044 Apple programs, 1941 Radio Shack/TRS-80 programs, 1353 IBM PC programs and 2266 programs in the CP/M format.

Table 3.3: Bestselling Applications Software Programs, Fall 1983

Program	Publisher	Cumulative Unit Sales	Retail Value	Publishers' Receipts
VisiCalc	Visicorp	700,000	$175,000,000	$ 85,000,000
WordStar	MicroPro	650,000	325,000,000	130,000,000
SuperCalc	Sorcim	350,000	75,000,000	20,000,000
PFS:File	Software Publ.	250,000	35,000,000	15,000,000
dBASE II	Ashton-Tate	150,000	105,000,000	45,000,000
1-2-3	Lotus Develop.	100,000	50,000,000	20,000,000
EasyWriter	Info. Unlimited	55,000	19,000,000	8,000,000

Source: Communications Trends, Inc. estimates

Table 3.4: Bestselling Business/Professional Software Titles Compared to Other Bestselling Business/Professional Information Products

Product or Publication	1983 Unit Sales	Unit Price	1983 Cust. Outlays	Revenues per Potential Cust.
Wall Street Journal	2,000,000	$ 90	$180,000,000	$ 2.25
Business Week	775,000	35	23,500,000	.30
Fortune	700,000	35	21,000,000	.28
In Search of Excellence	500,000	20	10,000,000	.13
WordStar	150,000	495	75,000,000	25.00
1-2-3	140,000	495	70,000,000	23.33

Source: Communications Trends, Inc. estimates and calculations

A more recent directory, "IBM Personal Computer & XT: The Software Guide" published by Micro Information Publishing Inc. (Prior Lake, MN) listed more than 3000 software products just for the IBM PC, while the "Annual Software Review" published by PC World in winter 1983-84 listed 1200 IBM PC programs. Table 3.5 shows comparative figures for number of programs as listed in these various directories.

Proliferation of Applications Software Programs

When programs like "VisiCalc" and "WordStar" began to take off, they attracted imitators by the scores--even by the hundreds. For example, text editing and word processing remains one of the most heavily published of any business and professional software category. There is no way to know how many text editing programs are available, but the number could easily top 100. The bestseller list from Softsel for the week of October 4 carried nine different word processing programs, including "WordStar," "Multimate," "Heswriter," "Bank Street Writer," "PFS:Write," "Atariwriter," "Piewriter" and "Letter Perfect." The October issues of PC World and PC Magazine carried ads for no fewer than 24 different word processing programs, ranging in price from $100 to $500. These and other popular programs that were not advertised are listed in Table 3.6.

Table 3.5:
Number of Programs for Apple, Radio Shack, IBM PC

PC Clearinghouse Count	Early 1983	Late 1983
Apple	2,044	Not
Radio Shack/TRS-80	1,941	separately
IBM PC	1,353	itemized
CP/M 80, CP/M NET, CP/M 86	2,512	
Grand total, all formats	21,000	35,000

Programs for IBM PC, Various Sources

Source	Total	Date
PC Clearinghouse	1,353	Early 1983
Micro Information Publishing	3,000	Fall 1983
PC World	1,200	Winter 1983

Source: Compiled by Communications Trends, Inc. from PC Clearinghouse, Micro Information Publishing, PC World

Table 3.6:
Representative Word Processing Programs
for the IBM PC, October 1983

Program	Publisher
Benchmark	Metasoft
EasyWriter	Information Unlimited Software
Edix + Wordix	Emerging Technology
Electric Pencil	IJG
Fancy Font	Soft Craft, Inc.
Friendly Writer	Friendly Soft
Good Words	Oak Tree Computing
Letter Library	Delta Point Software
MicroEd/MicroScript	MicroType
Microsoft Word	Microsoft
Multimate	Softword Systems
Office Writer	Office Solutions
Palantir Word Processor	Designer Software
PeachText 5000	Peachtree Software
PerfectWriter	Perfect Software
PFS:Write	Software Publishing Corp.
Pie Writer	Hayden Software
PowerText	Beaman Porter
Readiwriter	Readiware Systems
Starmate	Solution Technology
Super Scribe	Cheapware
SuperWriter	Sorcim
Textra	Ann Arbor Software
The Final Word	Mark of the Unicorn
VisiWord	Visicorp
Volkswriter	Lifetree
WordPerfect	Satellite Software International
WordPlus-PC	Professional Software Inc.
WordStar	MicroPro International
Xywrite	XY Quest

Total, 30 different programs from 30 software publishers

NB: This list by no means covers all the word processing programs available for the IBM PC.

Source: Compiled by Communications Trends, Inc. from PC Magazine and PC World, October 1983 issues; from Softsel Hot List; and other sources

The proliferation of programs displayed in Table 3.6 makes it clear that only a tiny percentage of the applications programs in a given field can be successful. By way of illustration, assume that 500,000 IBM PCs are sold in 1983 and that 60% of the buyers, or 300,000, purchase a word processing program. Assume, further, that "WordStar" sells 85,000 of these copies, that "Multimate" and "WordPerfect" sell 35,000 each, that "EasyWriter" sells 15,000 and that "Volkswriter" sells 15,000. Assume further that Software Publishing, Microsoft and Visicorp enter the market--as they did--in 1983 and sell 10,000 copies each. The result would be that seven companies would account for 215,000 of the 300,000 units. If there are 35 remaining suppliers of word processing programs, these companies would have to fight over 85,000 units. The best these companies could do, on average, would be a little under 2500 copies apiece, and in reality, some would be lucky to sell 250 copies.

By adding Apple, Tandy, Digital Equipment and Hewlett-Packard computer owners to the universe of new buyers, one comes up with a market that is three or four times as large in units as the IBM PC market alone, but the reality does not change much for the smaller, marginal publishers. It should be noted that the numbers given above are only for purposes of illustration, and do not represent sales estimates.

VERTICAL MARKETS FOR MICROCOMPUTER SOFTWARE

Vertical markets represent an attractive opportunity for software producers. Some of the major categories for microcomputer software include:

- accountants;
- lawyers
- doctors, dentists, psychiatrists and other health professionals
- small businessmen of various types, e.g., insurance agents, retailers, independent manufacturers reps, etc.

No one category of market segment can possibly be as broad as the general market for word processing, spreadsheet or data base management titles. On the other hand, the willingness of professionals or small businesses to spend money for software packages tailored to their specific needs can be quite high; the effective purchase price for a legal office timekeeping and billing system can be $5000 to $15,000, many times the price of a "Peachtext" general purpose accounting program, or a "PFS:File" data base management program.

Some characteristics of the various submarkets are as follows:

Accounting

The 1977 Census of Services reported the existence of 136,000 establishments engaged in accounting, auditing and bookkeeping; of these, 39,000 had a payroll, employed a total of 240,000 people and had annual receipts of $7.2 billion. Assuming the other establishments consisted of sole

proprietorships, perhaps 250,000 to 300,000 professionals were engaged in independent accounting and auditing services in that year. Using the 1972-81 growth rate for all accountants, one can estimate that independent accounting and auditing establishments employed 350,000 to 450,000 professionals and had receipts of $15 billion in 1983.

Independent accountants are a major market for commercial income or payroll tax processing services run by Commerce Clearing House, Automatic Data Processing and other companies, with expenditures on such services running into the hundreds of millions of dollars annually. Commerce Clearing House, for example, had $105 million in revenues in 1982 from its Computax tax processing division and related computer processing activities.

The availability of powerful desktop computers priced in the $3000 to $7500 range, and of tax processing software priced at $500 to $2000, offers significant competition to these commercial service bureaus. Two major suppliers of such software are Software 1040, acquired by Prentice-Hall in 1982, and Aardvark, acquired by McGraw-Hill in 1983. Software 1040 licences software for use on minicomputers and microcomputers, with micros representing the fastest growing portion of its business. Aardvark has microcomputer software for tax return preparation that is aimed both at tax professionals and at individuals (see the profiles on Prentice-Hall and McGraw-Hill for more details). Peachtree Software also competes for accountants' business.

Legal

There were 581,000 lawyers and judges in the U.S. in 1981. Based on recent growth rates, and on the number of legal establishments in 1977 as reported on the Census of Selected Service Industries, one can estimate there were as many as 120,000 legal practices in 1982 employing upwards of 450,000 individuals and generating receipts of $25 billion.

Law firms represent, then, a significant market both for copyrighted information services and for information processing services such as internal accounting, billing and client timekeeping.

Companies providing computer timesharing services, mini- or microcomputer software to lawyers include M/A Com Office Systems, Professional Computer Services, Advanced Legal Software, Professional Data Corp., Best Little Software Co., Orion Systems and Univair International.

Health Professions

In the health professions, the major categories of establishments are doctors' offices, more than 165,000 employing more than 625,000 people; dentists' offices, more than 45,000 employing upwards of 285,000 people; and optometrists' offices, more than 12,000 employing over 32,000 people. There are also more than 33,000 drugstores and more than 150,000 pharmacists employed in drugstores, hospitals and other locations.

A number of mainframe and minicomputer software companies specialize in services to the medical and health professions. Among these are Shared Medical Systems (SMS) and HBO Inc. Companies specializing in microcomputer software for health professionals include Medisoft, International Micro Systems, Lear Data, Trinity Computing Systems, Johnson Associates Software, Computer Software for Professionals and Professional Systems Corp. In the medical field, it is typical to find software companies acting as value-added resellers who take an IBM PC or other micro, add proprietary software and install an entire system, ready to operate. Table 3.7 provides an overview of some of the major vertical markets.

THE MARKET FOR TRAINING SOFTWARE

One of the fastest growing software specialty markets in 1983 has been for software that teaches the customer how to use computer hardware and other software. The two main suppliers are Cdex and American Training International, but educational publishers like SFN and SRA (an IBM subsidiary) are also entering the field.

Some typical programs from Comprehensive Software Support teach about the IBM PC, e.g., "Principles of the IBM PC and Computer Programming" and "Interactive Tutorial Systems," each priced at $39.95. Cdex and ATI have titles covering the leading software programs, such as "Cdex Training for the VisiCalc Program."

SFN has moved into the field by purchasing 25% of the stock of ATI, with an option to acquire at least 25% more. One of SFN's subsidiaries, South-Western, is distributing ATI's products to the high school and college markets.

SRA's strength is its position as IBM's training publisher, and given the stagnation in its traditional elementary-high school markets, the business market for computer training should look increasingly attractive. Another potential competitor is Prentice-Hall: it is already the leading computer book publisher, and is heavily involved in the market for computer training through its ownership of Deltak Systems.

All the leading microcomputer training companies advertise in consumer computer magazines and general business periodicals; a startup company, Knoware (Cambridge, MA) ran two-page spreads in Business Week and Forbes in November 1983 to announce its first product, "Knoware," which provides an introduction to spreadsheets, word processing, data base management, etc.

NEW DIRECTIONS IN SOFTWARE: WINDOWS

The current infatuation with windows and mouse-like pointers began with brilliant software developers at SRI Institute and Xerox, and the first commercial product, in the early 1980s, was the Xerox Star. This personal computer, billed as an executive workstation, sold poorly because of its high price, but it was a pioneering attempt to simulate the office desk by dividing the screen into "windows" and by permitting the user to control computer operations by using a hand-held mouse, or pointer. The next attempt was Apple

Table 3.7:
Major Vertical Markets for Microcomputer Software

Category	Number of Professionals	Number of Establishments	Suppliers of Processing or software
Accounting	1,126,000	50,000	Commerce Clearing House, ADP. Aardvark, Software 1040, Peachtree
Legal	581,000	120,000	Advanced Legal Software, Orion Systems, Computer Software for Profess'ls
Physicians	454,000	175,000	SMS, IMS, HBO, Univair Int'l, PCD Systems, Johnson Associates
Dentists	130,000	45,000	IMS, Computer Software for Professionals
Pharmacists	152,000	33,000	Pharmacy Automation Systems

NB: Number of establishments is the number of physicians', lawyers', accountants' and dentists' offices with payroll, as well as the number of drugstores.

Source: Census of Service Industries, 1977, as reported in Statistical Abstract of the U.S.; figures updated by Communications Trends, Inc. to 1981-83 period

Computer's Lisa, introduced in spring 1983 at a price of $10,000, including software. It sold slowly at first, and in fall 1983 Apple dropped the basic price and allowed customers to buy the hardware by itself.

Then the software companies stepped up to the plate. In November, Visicorp began shipping "VisiON" and Microsoft displayed "Microsoft Windows." Both were examples of a new kind of "environment" software that enhances the computer's operating system by permitting the user to run two or more applications programs at the same time. Microsoft introduced "Windows" at a press conference at which 23 manufacturers agreed to offer the new software. Among them were Apple, Tandy, Texas Instruments, Digital Equipment Corp., Honeywell and Compaq. (IBM was conspicuously absent, although the use of windows is a main feature of a new personal computer, the model 3270, that it introduced in October.)

A basic windows package will sell for between $150 and $500 (Visicorp's system sells for $495), but in addition the computer owner must buy applications software that works with it. Thus, the new software represents an opportunity to increase the amount that the new computer owner spends on software, while also holding out the possibility that existing owners will upgrade their systems--and thus require new applications software packages as well.

SUMMARY

Systems and applications software are the two principal categories of microcomputer software. Systems software consists of the operating system, languages and other programs that control the computer. Only a few companies compete in this important market; the two best known are Microsoft, which dominates the 16-bit computer market for operating systems; and Digital Research, whose CP/M system was the leader for 8-bit micros. Successful systems software products, like MS-DOS, can sell millions of copies, although the revenues to the producer are modest because of low retail prices and royalty arrangements with hardware manufacturers.

The applications software market features many more participants and is far larger in size. Although the demand for any one type of applications software is less than 100% of computer owners, combined unit sales of all applications packages exceed hardware unit sales.

A few bestselling applications programs, like "VisiCalc," "WordStar," "SuperCalc," "PFS:File" and "dBASE II" have sold hundreds of thousands of copies, and brought windfall profits to their publishers. Sales of most applications programs are far more modest, however. The word processing market illustrates vividly the highly competitive nature of the field: more than 30 programs are competing for the word processing dollars just of IBM PC owners.

Several vertical markets, like accounting, law and medicine, represent attractive opportunities, as does the training market. Another area of growth can be new windows software that enhances a computer's capabilities.

ISSUES IN THE MARKETING AND DISTRIBUTION OF SOFTWARE

No aspect of the microcomputer software business is less settled than the question of how software should be marketed and distributed. Because the industry is so new, and because growth in number of users, publishers and intermediaries has been so rapid, nearly everyone involved in the software business confesses to some uncertainty about how the future distribution of software will evolve. At present, software can be, and is, sold in the following ways:

- Through distributors who sell to computer dealers and other retailers;

- Through retail outlets that can include:
  1) computer stores
  2) software stores
  3) bookstores, both general and college
  4) mass merchandise outlets
  5) specialty electronics stores, record stores, etc.;

- Through mail order, directly to the consumer;

- Through OEM deals with computer manufacturers who put their own name on a software title and offer it with the hardware, through their own product centers and through dealers.

Which of these channels makes the most sense depends on the type of software involved, the historical background of the software publisher and the skill of a company at a given type of marketing.

The software houses like Visicorp, Microsoft and MicroPro that are the leaders in the microcomputer software business at present got their start when the universe of personal computer owners and dealers was quite restricted. In some cases, lack of capital for the early pioneers meant they were willing to give their products to independent distributors for a deep discount but on a COD or quick-payment basis. What's more, the products were non-returnable. In this way, a pattern of doing business arose that emphasized big discounts but which required distributors and retailers to take all of the inventory risk inherent in stocking new software titles.

One of the major questions facing the software industry is whether this sales pattern will continue now that many more retailers are entering the business—retailers from businesses like books, records, toys or even other

business products, who expect the provider of a product to offer some guarantee of its salability by accepting returns. Whereas the issues of discounts and returns are often discussed as two separate questions, actually they are linked: the bigger the inventory risk to the resellers, the more discount they will require to handle a product. On the other hand, the more a publisher does to reduce the inventory risk, and the more he does to promote a product and create final demand, the less need there becomes for a very high discount schedule.

The following sections will discuss distribution problems from the point of view of the major participants in the software industry.

SOFTWARE PUBLISHERS

The software publisher is interested in marketing his programs to the widest possible audience at the lowest possible cost to his own company. While this maxim applies to any business, how it operates in the software business is determined by the brief history of this field. In the early days of the personal computer industry, back in the late 1970s, there were few publishers and few retailers. Publishers were able to operate from garages or basements, to make available their products in crude packages (such as the plastic "baggie" that was fastened with a staple) and to bring those products to the attention of would-be purchasers through personal promotional efforts and through small mail-order advertisements in the early computing magazines. Because the personal computer owners were knowledgeable computer buffs, they could put up with inadequacies in software—and besides, there was little alternative, given the limited amount of software available.

Software publishers became accustomed to low-cost marketing, which suited them well, since these firms were undercapitalized. When distributors like Softsel started, the publishers looked on them as a source of cash: they were able to deliver finished programs to a distributor, collect cash and leave to the distributor the problems of marketing and shipping to a network of retailers. This situtation gave rise to the practice of very high distributor discounts which characterizes the software business today, and distinguishes it from other industries like books, records, video tapes or business equipment. In these fields, discounts of 35% to 45% off list price are the norm, and a discount of 50% is highly unusual. In software, 45% is almost a starting point, and a number of software publishers routinely grant 60% to distributors.

Because the methods of mail order selling and selling through distributors worked so well for the early software publishers, these companies did not have to establish sales forces that called on retailers or on end customers—a lack which further handicapped the software publisher in controlling the marketing of his own programs. Belatedly, companies like Microsoft, MicroPro and Visicorp have begun to sell to retailers and to large corporations using their own sales forces, but this is a relatively recent development.

DISTRIBUTORS

A handful of software distributors exert a major influence on the

business/professional software market. Included in this category are:

. Softsel Computer Products, Inglewood, CA, which had $35 million in 1982 revenues and which was expecting between $80 million and $85 million in revenues in 1983;

. Micro D, Fountain Valley, CA, which did $25 million in sales in its fiscal 1982 and which was running at a rate of $70 million to $75 million in fiscal 1983, which ended October 31;

. Softeam, doing business as Software Distributors, Culver City, CA, which began operations as a subsidiary of Ashton-Tate but was spun off as a separate company in spring 1983; the company expected revenues in fiscal 1984 of around $15 million to $20 million;

. SKU, located in Berkeley, CA, whose revenues were estimated to exceed $25 million in its fiscal '84; unlike the three other distributors mentioned above, SKU concentrates more on low-priced entertainment software than on business/professional titles. McKesson Corp. reached agreement to acquire SKU in October 1983.

The distributors perform a number of important functions for both publishers and retailers. For example, they:

. screen new software titles for technical quality and salability; Softsel and Micro D have elaborate, formal evaluation procedures for new products that are submitted;

. handle the opening of new retail accounts and all the problems of billing and collecting from thousands of retailers, many of them new to the computer and software field;

. maintain inventories of software so that the retailer can be assured of ready availability of desired titles without himself having to invest large sums in inventory;

. provide "stock balancing" or returns privileges so that a retailer can exchange software publisher A's title, which may not be selling, for publisher B's title, which is selling.

Nevertheless, the software distributor does not have the same interests as the publisher. In particular, the distributor wants and needs the continuation of the present high discount structure, in order to provide an operating margin and profit for his own business. Distributors aim for a spread of about 10 or 11 points, seeking to buy software at 55% off list, and to resell it to retailers at 43% to 45% off.

The continued high rate of openings for new retail outlets works in favor of a strong market presence for the distributors, because new retailers are most in need of a distributor's services. On the other hand, the increase in size of both the publishers and of regional or national retailers, makes it inevitable that both publishers and retailers will want to deal directly with

one another, bypassing the need to go through the distributor. Table 4.1 summarizes information about four leading distributors.

RETAILERS

The orientation of the software retailer depends very much on his main business. Three main types are:

. The computer store. This retailer's main emphasis is on selling computer hardware, particularly beginning systems to new owners. Although software is important to this retailer or dealer, the software is a means to an end, rather than an end in itself. Usually the computer store or computer dealer can only stock a limited number of software titles, and relies for purchasing on someone else—a distributor, a franchisor, if he is part of a franchise, or a group owner.

. The software store. This is a retailer whose entire business consists of software and accessories. Although there were only 200 or so such stores as of mid-1983, their numbers are growing rapidly as a result of franchising by such chains as Softwaire Centers International, Software City and The Program Store. Because the software store can carry 1000 or 2000 different titles, this kind of retailer needs to be more knowledgeable about software, and will probably depend less on distributors, than the computer store.

. The general or specialty retailer from another field. Examples are the bookstore (such as a B. Dalton or Walden outlet), the record/audio store (such as a Pacific Stereo, a Goody's or a Record Hunter), the catalog store (such as a Venture Stores outlet) or the mass merchandiser (such as a K mart, Sears or Toys R Us outlet). The common denominator for all these retailers is that software is a sideline. Although it may ultimately become quite significant, the general or specialty retailer today treats software as either an experiment, or as a product that is ancillary to his main business. Usually this kind of retailer does not have the time to become expert in software trends or selection, and thus must depend on distributors or other intermediaries for title selection. The mass merchandiser often wants a rack jobber to stock and maintain an entire floor section for him, so that he does not have to bother with adding stock or replacing titles that aren't selling.

Table 4.2 provides an overview of the types and numbers of retailers carrying business/professional software as of mid-1983.

With the expansion in the number of retail outlets carrying computers and software, and with the growth in the overall computer market, has come the rise of major chains of computer and software retailers. Some of the most important of these are: ComputerLand, ComputerCraft, Computer Factory, Compushop, Entre Computer Centers, Programs Unlimited and Businessland, among the hardware-oriented retailers; and Softwaire Centers International, Software City and The Program Store among the software retailers. Table 4.3 contains summary information on various of these companies. Chains like ComputerLand, Computer Factory and ComputerCraft are far more likely to buy directly from the software publishers than are individual retailers; thus the growth of

Table 4.1: Leading Software Distributors, 1983

Company	1983 Revenues (in millions)	Software Revenues (in millions)
Softsel Computer Products	85.0	80.0
Micro D	75.0	33.0
SKU*	20.0	17.0
Softeam (Software Distributors)	15.0	13.0
Total, 4 companies	195.0	143.0

*Revenues are primarily from entertainment software, not business/professional software. SKU estimate is for calendar 1983; revenues in fiscal '83 (ended March 31) were about $12 million.

Source: Communications Trends, Inc. estimates

Table 4.2: Retailers Carrying Business/Professional Software, 1983

Type of Retailer	Total Outlets	Outlets With Software	% of Outlets Carrying Software
Computer store	4,000	4,000	100.0%
Software store	200	200	100.0%
Bookstores	18,000	100	.6%
Mass merchandisers	52,000	50*	.1%

*Number of mass merchandisers carrying entertainment software is much higher, perhaps 10,000 outlets, but few of these sell business software.

Source: Communications Trends, Inc.

these companies portends future changes in the pattern of software sales.

SPECIAL SALES CHANNELS

OEM Sales

Besides sales through distributors and retailers, major software publishers have pursued a number of other sales channels for business and professional titles. One of the most important has been OEM sales to manufacturers. In this method, the software publisher sells a large number of copies of his program to a manufacturer for resale under the manufacturer's name, or else he licenses the replication of the program to the manufacturer.

Such a deal might net the publisher only 10% of the list price of the program, but the large quantities and low selling costs involved can still make this an attractive proposition for the software company. Almost all major software publishers engage in OEM sales; OEM business might constitute 30% to 35% of total revenues for publishers like MicroPro and Sorcim, and as much as 60% for Perfect Software, which made its initial mark through OEM deals with Kaypro and other manufacturers.

For an established software company, it would seem to be self-defeating to license rights to, or sell deeply discounted copies of, a well-known program; such sales apparently cut into the revenues that the publisher could generate on its own. Nevertheless, companies continue to pursue OEM sales for several reasons: 1) cash flow--the OEM business provides immediate cash with which to fund ongoing operations; 2) extended marketing reach--a medium-sized software publisher can never reach as many accounts or customers as can a Tandy, Apple or IBM; and 3) defensive considerations. As one major software publisher explained, "If we don't make the OEM deals, someone else will." At least by offering its products on an OEM basis, this publisher explains, he gets his products into the hands of customers and keeps competitors' products out of those hands.

National Accounts Sales

Since mid-1982, major software companies have awakened to the fact that there is a corporate market for business/professional programs, and that such programs can be sold in bulk. Of course, this selling is expensive to embark on, because it requires a national sales force and a support organization. However, major companies like Microsoft, MicroPro, Visicorp and Lotus have decided that they have no choice but to pursue these direct sales. The problem is how to do it without competing with the retailers and dealers who are still the bread and butter sales channel for business software.

One approach is the one undertaken by Lotus Development Corp.: it set up a key dealer program whereby qualified dealers can benefit from assisting in large-volume sales of "1-2-3" to large corporations. Participating dealers who refer corporate sales leads for "1-2-3" to Lotus are eligible for commission "credit payments." The catch, however, is that these credits can

Table 4.3: Major Chains and Franchisers of Computers and Software, 1983

Company	Type	Product Orientation	Number of Outlets, September 1983
ComputerLand	Franchiser	Hardware	500
Radio Shack	Owner/operator	Hardware	400
Entre Computer Centers	Franchiser	Hardware	75
Businessland	Owner/operator	Hardware	15
ComputerCraft	Owner/operator	Hardware	33
CompuShop	Owner/operator	Hardware	35
Programs Unlimited	Franchiser	Hardware/ software	52
Byte Shops	Franchiser	Hardware	17
Computer Factory	Owner/operator	Hardware	7
Softwaire Centers International	Franchiser	Software	30
Software City	Franchiser	Software	52
Program Store	Owner/operator/ franchiser	Software	20

Source: Communications Trends, Inc., compiled from company literature and financial reports.

only be applied to future purchases of Lotus software. Dealers may not be wildly enthusiastic about such a scheme, but probably figure it's better than the alternative, which is no share of volume corporate sales, and no commissions or commission credits at all. The first dealers to earn credits under the Lotus program were Morris Decision Systems of New York City, and Computer-Works of Westport, CT, both well known as large, business-oriented dealers.

Mail Order Sales

No one knows exactly how big the volume is of business/professional software sold by mail order, but it is substantial. Companies like 800-Software in Berkeley, CA and Conroy-Lapoint in Portland, OR run full-page ads or two-page spreads in every issue of InfoWorld magazine and in other computer publications. 47th Street Photo, a leading New York retailer of computers, photographic and electronics products, also does a significant mail order business. The volume for all mail order software sellers combined runs into the many millions of dollars; by one estimate it could account for as much as 25% of all business and professional software sales.

ADVERTISING AND PROMOTION

Advertising and promotion have assumed major importance in the business/professional software business. Between 1982 and 1983, the level of spending on advertising, trade promotion, exhibits and other forms of marketing communications jumped sharply. The best example was the startup of Lotus Development Corp.: before it introduced its "1-2-3" integrated software program, it spent more than $1 million on advertising and public relations. The effectiveness of this promotion, combined with the quality of the program, enabled Lotus to sell more than 60,000 copies in its first six months, between January and June 1983.

Major software publishers like Peachtree, MicroPro, Digital Research and Visicorp have stepped up their own advertising and promotion budgets. It is not unusual for such companies to be spending between $2 million and $4 million on advertising and promotion on an annual basis. Although these sums are not large in absolute terms, they nonetheless represent 5% to 10% of a software publisher's annual revenues. Table 4.4 contains estimates on the advertising and promotion budgets of major software publishers.

Table 4.5 gives figures on print advertising alone for leading business/professional software companies for the first nine months of 1983, and projections for the full year. These figures cover only space advertising in computer magazines and several general business publications, but do not cover other consumer or trade magazines, or any broadcast advertising. Nine-month figures are from Adtrak, a leading advertising measurement service for the computer industry, while full-year estimates are by Communications Trends, Inc.

Advertising has a number of functions in today's business/professional software market. One obvious function is to bring a title to the conscious attention of the consumer, since consumers have so many choices: dozens of word processing, electronic spreadsheet or date base programs (see Chapter 3).

Table 4.4: Advertising and Promotion Budgets of Leading Business/Professional Software Companies

Company	Category	Amount in millions	% of Revenue	Period
Ashton-Tate	Advertising, promotion	$1.6	8.9%	6 mos. ended 7/31/83
Lotus Development	Sales and marketing	$4.2	33.3%	6 mos. ended 6/30/83
Peachtree Software*	Advertising, promotion	$2.5	10.4	1983
Microsoft*	Advertising	$5.0	5.0%	Fiscal 1984
Digital Research*	Advertising	$3.0	6.0	1983
Software Publishing Corp.*	Advertising	$1.5	15.0	Fiscal 1983

*Estimated

Source: Compiled by Communications Trends, Inc. from interviews, financial reports, published sources. Where an estimate is given, it refers both to the advertising/promotion budget and to a company's annual revenues.

Table 4.5:
Nine-Month and Projected 1983 Space Advertising Expenditures of Leading Business/Professional Software Companies

Company	9 Mos. 1983	Projected 1983
Lotus Development	$1,538,231	$2,350,000
Microsoft	1,479,988	2,275,000
Ashton-Tate	1,271,885	1,950,000
MicroPro	1,264,623	1,950,000
Digital Research	936,929	1,450,000
Software Publishing	677,787	1,050,000
Peachtree	654,818	1,000,000
Sorcim	640,466	985,000
H&E Computronics	468,025	725,000
Total, 9 companies	8,932,752	13,735,000

Source: Nine-month figures copyright by Adtrak, Inc., PO Box 226, Goldendale, WA 98620; full-year projections by Communications Trends, Inc.

An important aspect of this function is to stake out a position vis-a-vis actual and potential competitors. As Fred Gibbons, president of Software Publishing Corp., put it in a speech to a group of businessmen in New York in October 1983, the barriers to market entry in software are "marketing, marketing and marketing." He explained that "anyone can reverse-engineer someone else's product," in six months, whether the product is "PFS:File" or "1-2-3." Hence the protection for a software publisher is not to much copyright or uniqueness as it is market position and consumer reputation—both of which can be established, at least in part, through advertising. That is the reason SPC spent 40% of all 1983 sales on marketing activities, and 15% on advertising alone.

Another function of advertising is to help overcome the fear of computers by stressing the positive benefits to be gained from a particular program. A final function—and one that may be the most important of all—is to impress the distributors and retailers who are carrying a software line, or who perhaps have not yet begun to carry it. Because these intermediaries have so many choices about which products to carry, software producers must convince them that there will be customer demand for a specific title. Advertising is one way for the software company to demonstrate that it is serious about stimulating demand. Retailers, for example, are convinced that advertising pulls customers into their stores. As one major software store manager explained about a well-advertised accounting and word processing package, "It's not really that good, compared to other software, but I have to carry it. Customers see the ads and come in to ask for the product."

DISCOUNTING AND PRICE REDUCTIONS

Discounting from list price is already pervasive in the business/professional software business. There are many reasons why the practice exists—and why it is bound to continue, perhaps even intensify. Among them are the following:

1) There is a wide spread between the replication cost of piece of software and its retail selling price. If a product can be duplicated and boxed for $5, or at most $10, and it commands a list price of $495, there is great temptation on the part of publishers to treat the list price as a fiction, and to cut it for almost any reason.

2) Official discounts granted to distributors and retailers are hefty compared with other industries, thus permitting these resellers to discount and still make a profit.

3) As lower-priced software comes on the market to compete with existing titles, publishers are offering a variety of special terms, rebates and discounts to maintain or increase market share. An example is the special promotion run by Perfect Software through Softsel in September 1983: retailers were able to buy a package of software carrying a nominal list price of $495, at a dealer cost of $165, for an effective discount of 67%. On top of that, Perfect Software offered the end customer a rebate of $50 per title. The effect of all this wheeling and dealing is to reduce the net proceeds to Perfect Software to about 17% of list price, assuming a normal distributor discount!

4) Not only do customers have a staggering choice of software for almost any application, but they also have the option of illegally copying software by borrowing a friend's. Even software with copy protection can be duplicated if a customer works hard enough at it, and acquires the right software tools for getting around copy protection.

One of the prime reasons for the discounting is the overly generous discount schedules of the software publishers. One option for these companies, certainly, would be to reduce the list price of their software and to keep the dealer price the same, thus officially passing on to customers the savings that many are already realizing unofficially. By increasing the credibility of software publishers and sellers, such a move might actually work to the benefit of those whom it would appear to hurt: the distributors and retailers. As things stand today, the most efficient distributors and retailers will find a way to offer products at a lower price anyway.

Future Price Trends

The easiest prediction to make about the future of the business/professional software market is that prices will come down. In fact, prices have been coming down, in general, since the market began. But this trend has not prevented the publishers of leading programs like "VisiCalc," "WordStar" and "1-2-3" from maintaining prices that are several hundred dollars higher than some of their competitors. What is striking about this situation is not the prices that have come down—there are many examples of that—but the prices that have stayed up. Clearly, customers do differentiate between specific software products, and are willing to pay a premium for those titles which are perceived as superior.

The price of business/professional software must always be kept in perspective: although a $500 package may only cost $10 to make, it can still represent an enormous bargain to a customer who would otherwise spend thousands of dollars on custom programming or on manual labor to do the same job that the software helps him accomplish.

What seems likely is that a multi-tiered software market will evolve, similar in some ways to the automobile or clothing market: the most affluent, fashion-conscious or performance-conscious consumers may continue to buy a $400 or $500 word processing program, whereas many of their peers will be content with a $100 or $150 program that does the job. Programs selling for $50 to $75 will also have their place, though it is not clear at this writing how developers of such programs can earn enough gross profit to update and support their software.

Effect of Changes in Discount Structure

One can speculate about how changes in list prices and the discount structure of higher-priced programs might affect the principal parties involved: publishers, distributors and retailers. One such exercise—admittedly hypothetical—is portrayed in Table 4.6. The first column gives the present trade discount structure and gross margins earned on a program listing for

Table 4.6:
Effect of Hypothetical Change in List Price
and Discounts on Gross Margins of Publishers, Retailers and Distributors

	Present Structure	New Structure
List price	$500	$400
Price to dealer	285	240
Dealer margin	215 = 43%	160 = 40%
Distributor selling price	285	240
Price to distributor	225	190
Distrib. margin	60 = 21%	50 = 20.8%
Publisher selling price	225	195
Cost to pub.	25	25
Pub. margin	200 = 88.9%	170 = 87.2%

	Present Gross Margin at Unit Sales of 1000	Gross Margins if Unit Sales Rise 10%	Gross Margins if Unit Sales Rise 25%
Retail receipts	$500,000	$440,000	$500,000
Dealer margin	215,000	176,000	200,000
Distributor margin	60,000	55,000	62,500
Pub. net receipts	200,000	187,000	212,500

Source: Communications Trends, Inc. calculations.

$500: at a 55% discount to distributors and a 43% discount to dealers, these intermediaries earn gross margins of $60 and $215 respectively. Assuming a manufacturing cost per program of $15, the publisher's gross margin is $210 a unit.

If list price were reduced to $400 and the discounts to distributors and dealers were reduced, respectively, to 51.25% and 40%, the effect on gross margins would be as shown in the second column: the dealer's margin declines to $160, the distributor's to $50 and the publisher's to $170. The real effect, however, will depend on what happens to unit sales. The bottom part of the table shows what the effect will be if unit sales rise by 10%, to 1100 units, and by 25% to 1250 units. In the latter case, the distributor will earn 4% more gross margin dollars than he would have gotten had the product been priced at $500. The publisher earns 6% more, the retailer slightly less. Given the widespread price cutting being done by retailers and mail order sellers, however, one can argue that the effective retail price of a $500 program today is close to the $400 mark. In that case, revising the discount schedule would only make explicit the terms of business that are already in effect.

SUMMARY

Independent distributors play a key role today in buying business/professional software from publishers and reselling it to dealers. Softsel, and Micro D are the two major distributors, and will each have revenues in the $75 million to $85 million range in 1983. The distributors aim for a discount from list price of about 55% and try to resell to retailers at 43% to 45% off, for an effective gross margin of 20%.

As regional and national chains of computer and software stores become more important, these retailers will seek to deal directly with publishers in order to increase their gross margin. Nevertheless, computer stores can only carry a limited selection of software, and therefore cannot become expert in its selection and merchandising; this fact seems to presage a continued, important role for the independent distributor. The important chains of company-owned or franchised stores include ComputerLand, Entre, ComputerCraft and CompuShop among the computer stores, and Softwaire Centers International and Software City among the software stores.

Besides sales through distributors and retailers, other important sales channels for publishers are OEM sales to manufacturers, mail order sales and national accounts sales to large corporations. OEM sales have been a significant percentage of total revenues for several publishers like Sorcim and Perfect Software, but are important even for a major company like MicroPro.

Even though such deals may net the publisher only 10% of list price, they provide cash, broaden a publisher's user base and also keep such business out of the hands of competitors. National accounts sales are a recent development, but companies like Lotus, Visicorp and MicroPro are now pursuing them aggressively. Some of these publishers work with local dealers to give dealers a percentage of any such sales.

Advertising and promotion have become central to the marketing tactics of business/professional software companies. Leaders like Lotus, Ashton-Tate, Microsoft and Software Publishing Corp. may spend as much as 15% of revenues on advertising and related promotion, a very high percentage. Advertising has several functions, including establishing customer awareness and encouraging dealers to carry a company's line.

The discount structure for business/professional software features much higher discounts than are characteristic of business/professional information products. Such a structure is causing considerable discounting by retailers and mail order sellers, and will probably lead to both reductions in list prices of software and to a shortening of discounts to distributors and dealers.

5

COST AND PROFIT STRUCTURE IN BUSINESS/PROFESSIONAL SOFTWARE

The economics of business/professional software are still being worked out, given the newness of the industry and the relative immaturity of the market. But at present, the field can be compared to several other business, such as business/professional publishing, the mainframe software business or high technology manufacturing, e.g. in electronics or semiconductors.

INTRODUCTION: SOFTWARE COMPARED TO OTHER BUSINESSES

Like business/professional publishing, business/professional software involves the sale of a copyrighted work whose price represents a significant markup over unit manufacturing cost. Like the mainframe software field or high technology products, business/professional software often involves very large development costs; variable expenses to make each unit are low as a percentage of selling price.

Table 5.1 lists salient characteristics of the economics of business/professional software. Compared to business/professional periodicals and books, the microcomputer software business has similar pricing--most software products cost the customer between $75 and $500, compared to a typical range of $35 to $500 for publications. The software business also has similar manufacturing costs: the $5 to $15 required to print a disk, manual and package compare to the $3 to $25 required to print a book or to print and fulfill a periodical subscription for a year.

However, microcomputer software differs from the print publishing business in the size of the market, which can be extremely large for software (see the discussion in chapter 3, especially Table 3.4), and in marketing and distribution costs, which are typically far higher as a percentage of retail price than comparable costs for printed publications.

Business/professional microcomputer software companies share with mainframe software companies the need to spend large sums on product development, although the variation is greater for microcomputer than for mainframe software.

As for profit potential, it is apparent after only a few years that windfall profits are possible for the business/professional microcomputer software company, just as they are for the business/professional publisher or the mainframe software company. A highly successful firm in each field can

Table 5.1:
Business/Professional Microcomputer Software
Compared to Business/Professional Publications and
to Mainframe Software

Feature	Business/prof'l publications	Mainframe software	Business/prof'l micro software
Unit price	$35 to $500	$10,000 to $100,000	$75 to 500
Market size, in units	500 to 10,000	500 to 10,000	500 to 1,000,000
Manufacturing cost/unit	$3 to $25	$50 to $250	$5 to $25
Marketing cost as % of revenues	15% to 30%	15% to 30%	20% to 35%
Pretax profit potential, successful firms	15% to 25%	10% to 25%	15% to 35%

Source: Communications Trends, Inc., based on company financial reports, interviews, industry sources.

aim for, and in some cases, achieve pretax profit margins of 25% to 30%. This high level of profitability stems from the fact that a successful product is perceived by customers as unique: either it has no competition, or the merits of the product are such that it can command a premium over the competition.

DEVELOPMENT COSTS

What micro software companies refer to as R&D would be called editorial or product development costs by a print publisher and development or R&D costs by mainframe companies. These are people costs: the salaries, fees, advances, travel, overhead and administration expenses of program designers, creators and programmers.

There is enormous variation in development costs for a microcomputer program. At one extreme are programs created by an individual in his home; he may put in hundreds or thousands of unpaid hours on a program before taking it to a publisher or distributor. To the publisher, the development cost of such a program is the cash required to secure the rights from the program--and the advance could be nothing, or $5000, or $50,000, depending on how well known the developer is and how much competition exists for the program rights. (That the publisher is better off in acquiring rights before a program becomes a bestseller is evident from the financial transaction in mid 1983 between Ashton-Tate and the developer and copyright owner of "dBASE II," Wayne Ratliff. Acquiring all rights to the program cost Ashton-Tate cash, notes and common stock with a total value of $8,492,000.)

For programs developed in-house, however, development costs can easily run into the hundreds of thousands, even the millions of dollars. E.g., Apple Computer's Lisa software, developed in-house, is reported to have taken two million man-hours of programming; with overhead and benefits, such an investment can certainly mount up to the figure of $50 million which has been given. Another huge investment for a similar product was made by Visicorp for its "VisiON" software, which competes with Lisa. Chairman Dan Fylstra has stated that estimates of $10 million for development are reasonable. At smaller companies the sums are also significant: Software Publishing Corp. president Fred Gibbons says SPC spent 15% of sales on product development in fiscal '83; that works out to $1.5 million.

Obviously a company can drown in uncontrolled or excessive development costs, but can also spend too little on development, or bring out products without sufficient trial and revision and thereby miss a superb opportunity. Thus, the trick is to match development budgets to the size of the opportunity, on one hand, and to the company's resources and management skills on the other. Although development costs must be expended in advance, and on faith, the real yardstick for these expenses is development cost on a per-unit basis: total development expenditures divided by unit sales. Lotus Development, for example, spent about $940,000 on research and development from its inception in April 1982 through June 30, 1983--most of that on a single title, "1-2-3." With unit sales at 60,000 through June 30, the development cost is only $15.67 per unit, or about 6% of the wholesale price of $250. This is a very reasonable percentage, and one that will drop even lower in succeeding years as unit sales continue to climb.

On the other hand, a "modest" development budget of $50,000 can turn out to be a poor investment if the resulting program bombs and only sells 500 or 1000 copies. In the latter case, the development cost per unit comes to $100, or about six times the unit development cost of a bestseller like "1-2-3." Table 5.2 illustrates some of the possibilities for development cost per unit sold, by taking three different development budgets—a low, barebones budget of $25,000; a major product budget of $250,000; and a blockbuster budget of $1.5 million.

For each type of program it is possible to wind up with development costs per unit sold of under $10. But to do so requires achieving bestseller status for a program in its category: the specialized title created for $25,000 must have unit sales of 2500 to hit the $10 mark, whereas the program with a blockbuster budget would need unit sales of 150,000. Considering that only five or six microcomputer applications programs have sold that many units to date (see Table 3.3), one can appreciate the risks involved in budgeting for a bestseller. To manage a software company in this way is not so different from managing a Hollywood studio or a paperback book company. Both kinds of firms have to know when to bet the limit. And both better have the kind of corporate checking account—or the kind of well-heeled corporate parent—that can absorb the shock of a big bet that doesn't pay off.

REPLICATION/MANUFACTURING COSTS

If development costs are an expense that can vary enormously from one program to another, replication or manufacturing costs have the advantage of being fairly predictable and of being likely to decline in the coming years. Replication costs include such specifics as: 1) blank diskettes, 2) duplication of diskettes, 3) layout and typesetting of manuals (documentation), 4) printing of manuals, 5) design of package to hold the program and 6) manufacturing of the package. Table 5.3 gives some hypothetical replication costs for a program involving two diskettes, a 128-page spiral bound manual; and a cardboard package with two-color artwork. The setup and design costs are fixed, whereas the materials and printing costs vary with the quantities produced. Total unit costs, combining setup expense with variable manufacturing and printing expense, range between $6.75 and $16.25 per unit produced.

One can see that although unit costs come down dramatically between the 1000 and 10,000 quantities, the variation in expense as a proportion of selling price is much less than was true for development costs as a percentage of selling price (Table 5.2).

MARKETING COSTS

Marketing costs were discussed in chapter 4. These will depend on whether a company sells entirely through distributors or has its own sales force; whether it actively pursues OEM licensing business or emphasizes full-price sales; and how aggressively it engages in advertising, public relations, trade show exhibits and other promotion. Assuming that a software company has a national sales manager, a sales force of six people and an advertising

Table 5.2:
Software Development Costs Expressed in Terms of
Units Sold for Three Different Types of Programs

A. Bare Bones Budget for Specialized Program;
Development Cost = $25,000; Retail Price = $150

Unit Sales	Cost per unit	Cost as % of Retail Price	Cost as % of Wholesale Price
500	$50	33.3%	67.6%
1,000	$25	16.7%	33.3%
2,500	$10	6.7%	13.3%

B. Budget for Significant General Interest Program,
e.g. in Word Processing, Spreadsheets
Development Cost = $250,000; Retail Price = $250

Unit Sales	Cost per unit	Cost as % of Retail Price	Cost as % of Wholesale Price
2,500	$100	40.0%	80.0%
5,000	50	20.0%	40.0%
10,000	25	10.0%	20.0%
25,000	10	4.0%	8.0%
50,000	5	2.0%	4.0%

C. Blockbuster Budget for Major General Interest or
Environment Program, e.g. Integrated Software
Development Cost = $1,500,000; Retail Price = $500

Unit Sales	Cost per unit	Cost as % of Retail Price	Cost as % of Wholesale Price
5,000	$300	60.0%	120.0%
15,000	100	20.0%	40.0%
50,000	30	6.0%	12.0%
100,000	15	3.0%	6.0%
500,000	3	.6%	1.2%

Source: Communications Trends, Inc. calculations

Table 5.3:
Replication Costs for Hypothetical Business/Professional Software Program

Program contains: 2 diskettes
128-page manual
7x10 cardboard package, 2-color art

Retail price: $250
Wholesale price: $125

	Cost per unit		
	1,000	5,000	10,000
Setup costs			
Master diskette, art, typography, package design	$ 5.00	$ 1.00	$ .50
Materials and printing costs			
Blank diskettes, disk replication, printing of manual, package	11.25	7.25	6.25
Total costs/unit	$16.25	$8.25	$6.75
As % of retail selling price	6.5%	3.3%	2.7%
As % of wholesale selling price	13.0%	6.6%	5.4%

NB: Percentages are calculated on basis of units produced. Costs as percentage of units sold will be higher; e.g. if a publisher produces 5000 units and sells 4000, the effective cost per unit sold is $9.06 and the percentage of wholesale price is 7.2%

Source: Communications Trends, Inc. estimates

and promotion program of the scope discussed in Chapter 4, the annual marketing budget could look as shown in Table 5.4. The total of $1.5 million should be enough to make budding software publishers think twice about blithely plunging into the market without adequate capital. While some software companies are getting by with smaller outlays than this table suggests, the biggest software publishers are spending three to 10 times as much. The second part of Table 5.4 shows how the absolute sales and marketing budget translates into a percentage of revenues at sales levels of $5 million to $12.5 million annually.

THE MARKET FOR SUPPLIERS

The suppliers to the business/professional software publishers enjoy a market that while small is extremely dynamic. The major categories of suppliers deriving revenues from this market are:

- outside authors and program developers;
- manufacturers of diskettes;
- disk duplicators
- paper and printing companies
- magazines and newspapers selling advertising space
- trade shows selling exhibit space

Figure 5.1 is a representation of where the business/professional software sales dollars goes today, so that readers can see more readily what the opportunities are for outside suppliers. Fifty percent of revenues--15% and 35% respectively--go for program development and marketing. Assuming that two-thirds of product development costs consist of internal salaries and one-third consists of fees and royalties paid to outside developers, then business/professional software publishers would be spending $25 million, or 5% of sales, on payments to program creators. This sum is probably one and a half times what it was in 1982, and in 1984 it should increase by another 75% to 100%.

Marketing is another big area of expenditure on outside services--chiefly advertising, direct mail and trade show expenses. Assuming these costs constitute 50% of the marketing budget, then expenditures on outside marketing services will reach $55 million in 1983, up from $25 million in 1982. At the present time, spending on marketing is increasing faster than sales, and such outlays will probably reach $130 million in 1983.

As for manufacturing, all these outlays represent revenues to outside suppliers, even though they are a relatively small portion of software publishers' revenues. Using an estimate of 15% of sales on manufacturing and product costs would mean a market for manufacturers of blank diskettes,

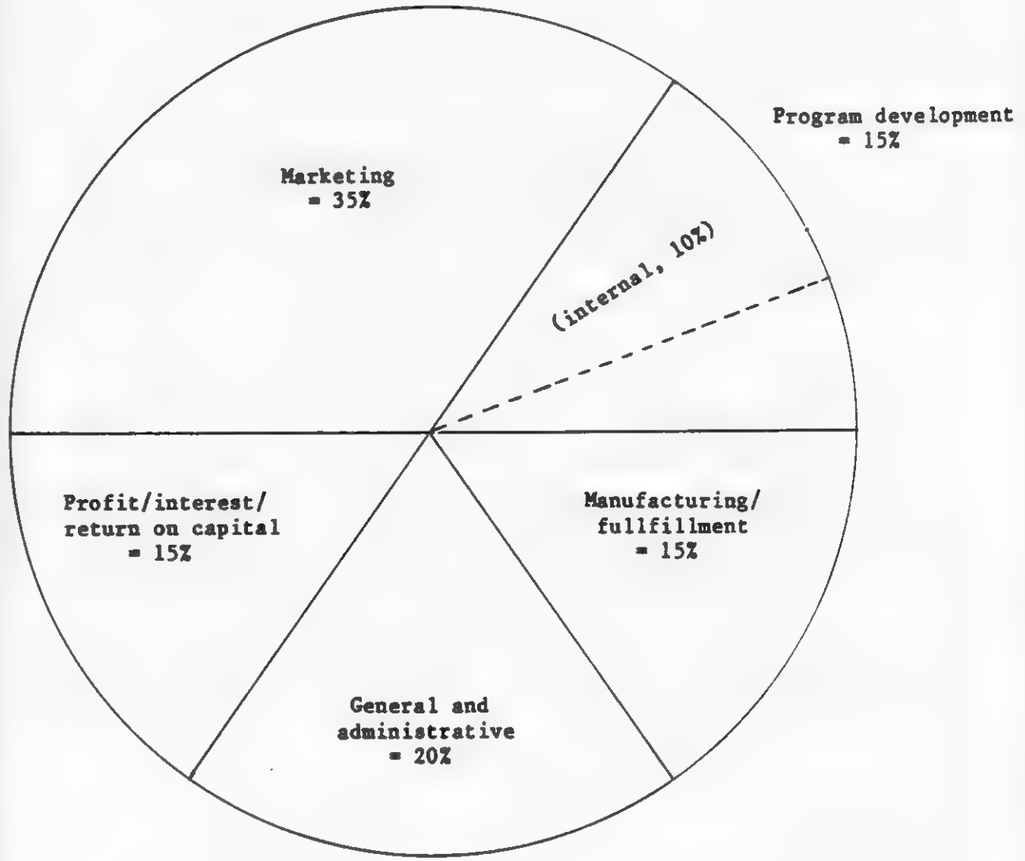
Table 5.4:
Annual Marketing Budget For Medium-Sized
Software Publisher

National sales force	
National sales manager and six sales reps	$ 300,000
Administrative, secretarial support	75,000
T&E, miscellaneous	75,000
Sub-total	450,000
Advertising & promotion	
Media budget	500,000
Direct mail, point of purchase, catalogs, public relations	250,000
Exhibits, five shows	150,000
In-house salaries & expenses	150,000
Sub-total	1,050,000
Grand total	$1,500,000

Annual sales	Marketing budget	As % of sales
$ 5,000,000	$1,500,000	30%
7,500,000	1,500,000	20%
10,000,000	1,500,000	15%
12,500,000	1,500,000	12%

Source: Communications Trends, Inc.

Figure 5.1: Business/Professional Software Sales Dollar:
How It Gets Allocated



Source: Communications Trends, Inc.

suppliers of disk duplicating, printers of manuals and packages, and all other suppliers of $70 million in 1983, up from $35 million in 1983. These expenditures are growing slower than sales and will probably reach $120 million in 1984.

Table 5.5 provides estimates of what the business/professional software publishing market was worth to various suppliers in 1982 and 1983, and what it might be worth in 1984. In order to give a flavor for the uncertainties involved, the estimates for 1984 are presented as a range of forecasts; the median forecast is the best guess about how this market will develop.

Table 5.5:
Business/Professional Software Publishing
as a Market for Outside Suppliers, 1982-84

	Sales to Software Publishers (in millions)			
Type of Supplier	1982	1983	1984	
Program developers	$ 10	$ 25	65 $ 50 40	H M L
Marketing services--space advertising, direct mail, exhibits, PR	20	55	150 130 115	H M L
Manufacturing--diskettes, duplicating, printing	35	70	135 120 110	H M L

M = median or best estimate. H = high estimate. L = low estimate.

Source: Communications Trends, Inc.

PROFITABILITY

After a few short years, it is apparent that business/professional software is an industry that holds out the lure of windfall profits. The case of Visicorp with "VisiCalc," of Lotus with "1-2-3" and of Ashton-Tate with "dBASE II" show that it is indeed possible to earn 25% or even 30% pretax in the microcomputer software business.

There are few publicly owned microcomputer software companies at present, but those few do give evidence of significant profit potential, as can be

seen in Table 5.6. The example of Lotus Development Corp., which achieved a 47% pretax profit margin in the first nine months of 1983, or of BPI Systems, which earned 39% before taxes in its fiscal 1983, will doubtless attract many imitators lured by these astonishing, if short-lived, successes. The real questions are: 1) how many companies will make it into this select circle of very high profit earners, and 2) what will happen to margins over time as competition cuts into prices and profits--and as successful publishers try to repeat their successes with additional titles.

This last point may be the most pertinent. The successful software publisher is a prodigious cash generator, and the pressure is on management to reinvest the profits in new products yielding as much as the old ones. In one sense, a software company is like a firm in the movie, mass market paperback or fashion industries--history counts for little, what is important is the latest release. However, software companies have one great advantage over companies in these other fields, and that is the staying power of a bestselling title. A program like "1-2-3" or "WordStar" or "PFS: File" that month after month sells 10,000 units is almost an annuity--more like a bestselling dictionary than this season's spy thriller. Of course such programs must be maintained and enhanced if they are to continue to sell well, but there is still more stability in certain software products than in other publishing fields.

SUMMARY

Although the history of microcomputer software publishing is brief, it is possible to compare the economics of this business to that of business/professional publishing and to mainframe software.

The main costs in microcomputer software are marketing, product development, and manufacturing costs, with marketing costs increasing more rapidly than sales. Outside program developers, magazines and providers of diskettes, disk duplication and various printing services are deriving the greatest revenues from the software industry at present.

Results of publicly owned microcomputer software companies indicate that pretax margins of 25% or more are possible. Nevertheless, it is too early in the history of the industry to know if such margins can be sustained.

Table 5.6:
Pretax Profit Margins for Four Publicly Owned
Microcomputer Software Companies

Company	Period	(000) Revenues	Pretax margin
Aston-Tate	6 mos. ended 7/31/83	$18,016	29.0%
BPI Systems	12 mos. ended 3/31/83	6,076	39.1%
Innovative Software	12 mos. ended 6/30/83	1,685	17.3%
Lotus Development Corp	9 mos. ended 9/30/83	29,103	47.7%

Source: Company financial reports

LEADING COMPANIES AND POTENTIAL COMPETITORS

The business/professional software market is dominated at present by fewer than a dozen companies that account for more than two-thirds of industry sales. These companies and their estimated sales were shown in Table 2.2. They are: Microsoft, Visicorp, MicroPro, Digital Research, Ashton-Tate, Lotus Development, Peachtree, Software Publishing and Sorcim. All these firms had revenues of at least $10 million in 1983 and the largest, Microsoft and Visicorp, were in the $60 million to $70 million range.

Other candidates for the top ranks of microcomputer software publishers would include Perfect Software, Information Unlimited Software (Computer Associates), BPI Systems and Softword Systems--all with revenues of at least $5 million. Software Arts, creator of "VisiCalc," would rank in the top 10 in revenues, but most of these revenues come from royalties, not from product sales. After these dozen companies come several hundred more, with revenues ranging from zero to a couple of million dollars.

Table 6.1 displays the top nine companies with revenues and estimated share of market. Microsoft, largest of the software publishers, had about 15% of industry revenues in 1983, followed by Visicorp with 13% and Lotus with 10%. The top five companies accounted for 56% of industry revenues.

CHARACTERISTICS OF LEADING COMPANIES: THE ONE-PRODUCT SYNDROME

One of the striking aspects of the leading software companies is the degree to which they are dependent on a single product, or a closely related family of products. This is most true of Lotus Development Corp., which derives 100% of revenues from one title, "1-2-3." But it is nearly true for Ashton-Tate with "dBASE II"; for Sorcim with "SuperCalc"; for MicroPro with "WordStar"; and for Software Publishing Corp. with "PFS:File" and "PFS:Report." Visicorp claims that 1983 saw much less dependence on "VisiCalc" than was true in the previous year, while Microsoft, once heavily dependent on MS-DOS and MBASIC, has also diversified into other products, including applications programs.

Table 6.2 illustrates how dependent several of the leaders are on revenues from a single product or a family of related products.

In one sense, the strong identification of these companies with their main products is an advantage, because customer awareness of and heavy repeat

Table 6.1:
Revenues and Share of Market for Leading
Business/Professional Microcomputer Software Publishers

Company	(in millions) 1983 Revenues	Share of Market
Microsoft	$ 70	15%
Visicorp	60	13%
Lotus Development	48	10%
MicroPro	45	10%
Digital Research	38	8%
Ashton-Tate	30	6%
Peachtree	24	5%
Sorcim	10	2%
Software Publishing	10	2%
Total, 9 leading companies	$335	73%
Total market	$468	100%

Source: Communications Trends, Inc., based on Tables 2.1 and 2.2

Table 6.2:
Dependence of Leading Software Companies
on a Single Program or Family of Programs

Company	Program	Percent of sales
Lotus Development	1-2-3	100% in 1983
Sorcim*	SuperCalc	More than 80% in year ended 6/30/83
MicroPro*	WordStar, SpellStar, MailMerge	Approximately 65% in 1983
Ashton-Tate	dBASE II	81% in six months ended 7/31/83
Software Publishing*	PFS:File, PFS:Report	75% in year ended 9/30/83
Softword Systems	MultiMate	100% in 1983

*estimated

Source: Communications Trends, Inc.

use of these products leads to intense customer loyalty. Indeed, customers become so dependent on software programs they have mastered that it is difficult to get them to try something competitive; this same dependence makes them all the more willing to buy an applications program in a different area from the same supplier.

The negative aspect, however, is that a software publisher with a single product is highly vulnerable to competition from a new product that, if it succeeds in the marketplace, begins to erode his entire revenue base. Thus the challenge for successful one-product companies is to use the cash flow from their successes to develop other new products. The pressure on these companies to reinvest is great, and that pressure can lead to costly blunders.

MICROCOMPUTER SOFTWARE COMPANIES COMPARED TO MAINFRAME SOFTWARE HOUSES

In 1982, of the top 10 independent software companies, not one was a microcomputer software house, although the largest, Management Science America (MSA), had acquired Peachtree. The eight largest in 1982 were MSA, Applied Data Research, Informatics General, Cincom Systems, Cullinet, Wyly, Computer Associates and Pansophic. (See Table 6.3.)

In 1983, by contrast, two of the top eight--Microsoft and Visicorp--are micro software houses, and two others--MSA and Computer Associates--had significant microcomputer software activities.

The mainframe and minicomputer software companies have an enviable growth record, with several of the leaders growing by 40% per year. Nevertheless, the growth rates in microcomputer software have been so spectacular that in another two years, several of these companies may overtake and pass all the mainframe software companies in gross revenues. Candidates to do so would be Microsoft, Visicorp, Lotus, MicroPro and Digital Research. Each would have revenues of well over $100 million if compound growth rates of 75% per year could be sustained in 1984 and 1985.

MICROCOMPUTER SOFTWARE COMPANIES COMPARED TO BUSINESS INFORMATION FIRMS

Another interesting comparison is to see how the microcomputer software companies stack up against the leading business/professional publishers. In this regard they have a much longer way to go to reach the top echelons in revenues and profits. Table 6.4 shows the leading business/professional information companies based on estimated 1983 revenues. Dun & Bradstreet is the clear leader with more than $1.4 billion in business information revenues forecast for 1983. McGraw-Hill, the second largest, will have $825 million in business information revenues; and Dow Jones, the third largest, will have $715 million. Even fourth-ranked A.C. Nielsen has $700 million in business information revenues. It is a long distance from these companies to the largest microcomputer software company, Microsoft.

Of course the leading business information companies are growing far slower than the software firms. D&B and McGraw-Hill are growing at 9% to 10% a year, Nielsen at less than that, Dow Jones at about 18% per year, compared to 100% for Microsoft. Nevertheless, if Microsoft, Visicorp and Lotus

Table 6.3:
Microcomputer Software Companies Compared to
All Independent Software Companies, 1982 and 1983

1982 Rank	1982 Company	1982 Revenues (millions)	1983 Rank	1983 Company	1983 Revenues (millions)
1.	Management Science America	$101	1.	Management Science America	$145
2.	Informatics General	68	2.	Informatics General	85
3.	Applied Data Research	68	3.	Applied Data Research	85
4.	Cincom Systems	58	4.	Cullinet*	78
5.	Cullinet*	49	5.	Microsoft	70
6.	Wyly (UCC)	49	6.	Cincom	70
7.	Computer Associates**	43	7.	Visicorp	60
8.	Pansophic	41	8.	Computer Associates**	58

*fiscal year ending April 30
**fiscal year ending March 31

NB: 1983 revenue figures are projected or estimated.

Source: Company financial reports, industry estimates, compiled by Communications Trends, Inc.

Table 6.4:
Leading Business/Professional Publishers Compared to
Leading Business/Professional Microcomputer Software Companies

Company	——millions—— Estimated 1983 Revenues*
Dun & Bradstreet	$1,400
McGraw-Hill	825
Dow Jones	715
A.C. Nielsen**	700
Microsoft	70
Visicorp	60

*business/professional revenues, not total corporate, for four leading business information companies **fiscal year ending August 31

Source: Communications Trends, Inc. estimates, based on company financial reports

Table 6.5:
Comparative Revenues for Leading Business/Professional Publishers
and Business/Professional Software Companies
Under Different Growth Rates, 1987

If business/professional publishers grow at 10% per year		If software companies grow at 50% per year	
Company	(millions) Revenues	Company	(millions) Revenues
Dun & Bradstreet	$2,050	Microsoft	$ 340
McGraw-Hill	1,220	Visicorp	300
Dow Jones	1,070	Lotus	250

Source: Communications Trends, Inc. calculations

were to grow at 50% per year for the next four years, and D&B, McGraw-Hill and Dow Jones were to grow at 10%, their revenues in 1987 would be as depicted in Table 6.5. D&B would still be five times as big as the largest microcomputer software house.

It is no accident that the leading business/professional publishers are moving to enter the software field. In 1983, McGraw-Hill bought Aardvark while Dun & Bradstreet purchased McCormack & Dodge, one of the largest mainframe software houses. Dow Jones has begun distributing its own personal computer software in the investment field. And other business/professional publishers are also active, among them John Wiley and Prentice-Hall. P-H acquired Software 1040 in 1982 and in early 1984 will launch its "Profit Center" line of business and accounting software with a multimillion dollar advertising and promotion campaign.

SOFTWARE COMPANIES COMPARED TO MICROCOMPUTER MANUFACTURERS

The microcomputer manufacturers are the sleeping giants of the software business. Already their software revenues are greater than those of all but the largest independent software companies. But the computer companies have generally not regarded software as an independent profit center, even though they are increasingly aware of its central role in spurring hardware sales.

The relationship between microcomputer companies and software companies is not entirely smooth, but on the surface it is quite harmonious. Apple, Tandy and IBM all license both systems and applications software from third-party publishers; in its product centers IBM sells IBM-licensed software and third-party software under the original publisher's name. Apple and IBM also engage in very large-scale software development of their own. In Apple's case, the development of the Lisa system was a mammoth job of software design and debugging, involving, by one estimate, up to 2 million man hours of system designers and programmers.

IBM has always engaged in large-scale development of operating systems and applications programs, and employs thousands of system designers and programmers. Most of these activities have been centered around IBM's mainframe computers until the present, but the IBM Personal Computer is beginning to be a significant portion of total corporate sales, and could become its largest contributor to revenues within a few years.

A general rule of thumb for microcomputer companies is that between 5% and 10% of revenues come from software sales. At Tandy, software has been rising steadily as a percentage of computer sales, from 7.5% in fiscal 1981 to 8.5% in fiscal 1982 to 9.2% in fiscal 1983; the latter percentage represents $78.8 million in revenues. The reason this number appears higher than the comparable figures for Apple and IBM, discussed below, is that the Tandy figure represents retail rather than manufacturer sales.

Apple has not broken out software sales separately. Assuming such sales were 7% of total revenues in fiscal 1983, they would have amounted to $69 million in fiscal '83, up from $39 million in 1982.

Table 6.6:
Total Microcomputer Software Sales
for Three Major Microcomputer Manufacturers,
1982 and 1983

Company	Year	Total Computer Revenues (all figures in 000)	Microcomputer Revenues (all figures in 000)	Total Software (all figures in 000)	Microcomputer Software (all figures in 000)
Apple	1982	$ 583,100	$ 583,100	$ 39,000	$ 39,000
	1983	982,800	982,800	69,000	69,000
Tandy	1982	624,000	624,000	53,000	53,000
	1983	856,400	856,400	78,800	78,800
IBM	1982	33,443,000	500,000	1,693,000	25,000
	1983	39,000,000	1,500,000	2,000,000	90,000
Totals, 3 cos.	1982	34,650,100	1,707,100	1,785,000	117,000
	1983	40,839,200	3,339,200	2,147,800	237,800

Percentage of microcomputer software revenues among the 3 leading manufacturers*:

1983		1982	
IBM	37.8%	Tandy	45.3%
Tandy	33.1	Apple	33.3
Apple	29.0	IBM	21.4

*may not add to 100% owing to rounding

Source: Communications Trends, Inc. estimates, based on company financial reports, industry sources.

IBM breaks out software sales in its form 10-K for 1982; in that year they came to $1.69 billion, or more than 15 times the revenues of the largest independent software company, MSA (see Table 6.3). Software product sales were 5% of IBM's total information processing revenues in that year. Applying the same percentage to IBM's personal computer business, which was estimated at $500 million in 1982, would yield related software revenues of $25 million. (Software sales in the U.S. alone are rising far more rapidly for IBM than overall information-handling sales; software revenues grew from $594 million to $935 million in the U.S. between 1981 and 1982, a 57% increase, compared to 26.5% for all computer-related revenues.)

In 1983, software may have accounted for a higher percentage of personal computer revenues. If the percentage was 6%, IBM's personal computer software revenues would have been $90 million in that year, higher than those of any independent microcomputer software publisher.

Table 6.6 provides figures on total computer and microcomputer revenues and estimated computer and microcomputer software revenues for the three leading manufacturers.

It should be pointed out that the higher the software revenues for Apple, Tandy and IBM, the higher the revenues for the independent publishers, since so much of the software sold by these manufacturers is licensed from third parties. Nevertheless, software companies are bound to be apprehensive that at some point, the manufacturers will come to regard software as a profit center in its own right. With their cash flow from equipment sales, they can spend far more than the independent companies on development, and could be a potent force in the market. For the foreseeable future, however, this threat will be more theoretical than real. The manufacturers have their hands full upgrading their hardware systems and seem unlikely to force a change in a relationship with independent companies that has served both parties fairly well.

OTHER COMPETITORS

Other entrants into the business/professional software field could come from a variety of sources. The agreement between McKesson Corp. and SKU for acquisition of SKU by the huge wholesaling company indicates that the software field is attractive to companies with no particular technological bent. Investments could come from firms in distribution, retailing, industrial and consumer products. The most likely new participants, however, are firms involved in electronics, telecommunications, computers and computer services. This could include firms like General Electric, Control Data, ITT, Tymshare, Automatic Data Processing, Rapidata and TRW.

Companies in the timesharing and service bureau business, like Control Data and GE, stand to be adversely affected by the further penetration of microcomputers and the trend toward on-site manipulation of data. GE, for one, has already moved into the sale of personal computers through its CRISCO division, while Control Data has made available its PLATO computer-based instructional programs for microcomputers. More such developments, including acquisition of microcomputer software houses, are likely as

companies in the computer and computer services industry struggle to adjust to the changes wrought by the microcomputer revolution.

SUMMARY

Nine leading microcomputer software companies, headed by Microsoft and Visicorp, account for an estimated 73% of business/professional software revenues in 1983. The biggest problem for these companies, however, is that several are highly dependent on a single product or closely related family of products.

Potential competitors for the microcomputer software companies include mainframe software houses, some of which--e.g., MSA and Computer Associates--have already made an investment in microcomputer software. At their present growth rate, the microcomputer software companies will rank among the top independent software houses in revenues within a few years.

Other potential competitors include the leading business information publishers. Of the four largest, three--Dun & Bradstreet, McGraw-Hill and Dow Jones--are already moving into the field, along with firms like Prentice-Hall and John Wiley. The large size and high profitability of the leading business/professional publishers means they must be taken seriously in the software field, despite their lack of some of the technical skills required.

The largest microcomputer manufacturers, IBM, Apple and Tandy, are already a signficant force in software, even though it accounts for less than 10% of their microcomputer revenues. Independent software companies have benefitted from a close relationship with these companies, but must be aware that they are also a competitive threat.

CONCLUSIONS AND FORECASTS

The business/professional microcomputer software business will enjoy several years of robust sales increases between 1984 and 1986. But as the rate of growth slows, and the number of competitors expands, the market will become increasingly treacherous for the many firms seeking a foothold in it. The following, concluding sections of this report will discuss some of the key aspects of the market in the coming years, before presenting forecasts of market size and growth through 1986.

MARKET STRUCTURE: CUSTOMERS, PUBLISHERS, DISTRIBUTORS, RETAILERS

In the immediate future, the microcomputer market will continue to evolve in two parallel directions: 1) greater penetration of personal computers in big companies, and 2) growing acceptance by small businesses and by self-employed professionals. This two-track environment will force software publishers to make choices about distribution strategies that are far more explicit than required heretofore.

Specifically, it will become more difficult for one publisher to sell software in every possible way--through manufacturers on an OEM basis, through distributors, to retailers and directly to corporate accounts. This last sales channel, while attractive on the surface, could turn out to be costly and frustrating for all but the very largest software companies. This is especially true since the declining prices of business software reduce the absolute dollars available to publishers for salespeople and for volume discounts. Only publishers with the broadest line of software products, or with software that justifies a premium price, will be able to bear these selling costs. Others will find it more economical to let distributors, retailers or manufacturers do their selling for them.

Other changes are in store for distributors and retailers. In the short term the position of the independent distributor should be strengthened; the reason is that many of the new retailers coming into the market will need help in selecting and buying software, and the distributors are well-placed to provide such help. In the longer run, the role of the distributor will diminish, although their sales will continue to climb. Computer retailers are becoming big businesses at a rapid rate, and the bigger they become, the more they will seek to buy directly from publishers.

Within the computer retailing world, computer stores face a threat from the many software stores that are springing up, as well as from the retailers in other field, like books, consumer electronics and records, that are angling for their share of the software business. It is likely that computer stores will get a declining percentage of the software after-market unless they find a way to stock and sell software more effectively than they do at present. The point of such merchandising must be to lure customers back to the store after the initial purchase of a computer system.

COMPETITION AND LEADING COMPANIES IN BUSINESS SOFTWARE

The business software market will remain surprisingly fluid over the next several years, despite efforts by today's leaders to crowd out newcomers through massive marketing and advertising programs. There are simply too many current and potential competitors for observers to conclude that the game is over, and that today's leaders--Microsoft, Visicorp, Digital Research, Lotus, and a few others--can automatically maintain their ascendancy.

These potential competitors, discussed in chapter 6, include mainframe software firms like Cullinet and Informatics, as well as leading business publishers like McGraw-Hill, Dun & Bradstreet, Dow Jones and Prentice-Hall. The computer manufacturers are also a threat, though they are unlikely to devote a lot of money to compete with the independent software houses that are working so effectively to sell microcomputer hardware.

However, the most serious competition for the software leaders will undoubtedly come from within--from the software designers and programmers who decide to strike out on their own. Having seen the shower of profits that can be the reward of a successful applications program, those who develop these programs will not be satisfied merely with handsome salaries and performance bonuses. Either they will get contracts giving them equity or significant profit sharing, or they will break away to start new companies. In either case, the cost of program development will be pushed up and profits driven down, as still other programmers appreciate what is happening and raise their own salary expectations.

Although models of microcomputer software development have yet to be worked out, this phenomenon of developers leaving to form new companies--as has been done so many times in the computer and electronics industries--may put an effective ceiling on the size to which a software company can grow. It certainly calls into the question the feasibility of developing programs in-house on a long-term basis.

NEW TECHNOLOGY AND SOFTWARE: COMPUTERS, TELECOMMUNICATIONS, DOWNLOADING

So many new technologies are on the horizon for the microcomputer industry that it would be pointless here to try to forecast which ones will be adopted and when. Computer companies are working hard to make new generations of equipment easier to use, whether the techniques involve touch screens, voice response, or operating systems and languages that are much closer to conversational English than today's computer idioms. In the short history of the microcomputer field it has become commonplace that

innovations in software are at least as important as breakthroughs in hardware, in raising the performance of computers and the productivity of users. The effort underway by Visicorp, Microsoft and others to introduce windows software is only the latest example.

A more pertinent question, however, is whether technological innovations in software distribution will radically alter the present system of buying and selling programs. Downloading and teledistribution of software are the obvious candidates to bring about such a restructuring. Downloading and teledistribution refer to the sending of a piece of software from one computer to another over a telephone or microwave or electromagnetic radio circuit; the program could be ordered and transmitted as a single transaction by a single customer, e.g., using a service like CompuServe, or it could be broadcast to any and all customers like a closed-circuit TV transmission.

Decreases in telecommunications costs make such downloading more feasible than in the past, but many problems remain before it can be viable as a common business practice. These include the time required to transmit complex programs--downloading seems to make more sense for games than for spreadsheets and word processing programs--the errors that can creep in to the transmission, and perhaps most important, the difficulty of maintaining a normal buyer-seller relationship over a telecommunications link.

It is a reasonable proposition that much of the growth of the software business has been facilitated by the use of traditional merchandising techniques. Using retailers as intermediaries has enabled customers to see software on display and to ask questions about it. Using advertising and promotion, including point-of-purchase materials, has enabled publishers to establish an image of and create demand for software as a physical product. And using conventional packaging has reinforced the identification of publisher and product, and helped get across the notion that software is a product to be taken home and used, like any other. One of the major reasons that the microcomputer software is already almost as large as the online data base business, despite being far newer, may be that data base publishers are distributing something that is entirely intangible, whereas software publishers are selling a box with a product inside.

For all these reasons, as well as for the technical and economic obstacles to downloading that persist, teledistribution simply does not loom as a threat to the present infrastructure of software publishers and resellers in the next several years.

COPYRIGHT AND PIRACY

Unauthorized copying of programs has been a feature of the software industry since its inception; the bigger the business grows, the greater the volume of copying. In this sense software has the same problems as other intellectual property businesses: the record industry, the home video industry and the scholarly book and journal publishing industry.

Producing programs with copy protection built into the source code offers some security to software publishers, but these systems can still be foiled

by those determined to make unauthorized reproductions. Many of the computer user groups that have sprung up around the country do a brisk trade in program copies, including software designed to get around copy protection.

In business/professional software, the incentive to copy is even greater than in the record or video business, because the spread is so large between the retail price and the physical cost of the unauthorized duplicate. In the record business the spread is 8:1, or $1 for the blank cassette to copy an $8 record. In video cassettes it is about 6.5:1, or $8 for the blank cassette to copy a $50 movie. But in computer software it can easily be 167:1, since the blank diskette costs only $3, while the retail price of "1-2-3" is $495. That sort of disparity only increases the temptation to acquire and use a program without compensating the copyright owner.

There are a few favorable signs for software publishers. The legal climate seems more favorable than it was in the 1970s, as witness the 1981 decision by the Ninth U.S. Circuit Court of Appeals in the Universal v. Sony case (that court found home videotaping to be a violation of the copyright laws) or the September 1983 decision by the Third U.S. Circuit Court of Appeals holding that Franklin Computer infringed on Apple Computer's copyright by copying software embedded in read-only memory.

The trend toward more corporate purchases of microcomputer hardware and software also works against piracy, since large companies are less likely to risk running afoul of the law by countenancing software copying. Lower prices for business/professional software will also somewhat reduce, although never eliminate, the incentive to copy.

PRICE CUTTING AND THE OVERSUPPLY OF SOFTWARE

The shadow of the video game business hangs over the computer software field, and anyone who insists otherwise should think again. True, video games are a consumer item while business software is a business product. True also, video games satisfy only the desire to be entertained, whereas computer software has the power to make people more productive. The essential parallel, however, is that in both cases a product costing only a few dollars to manufacture can sell hundreds of thousands, even millions, of copies at 10 to 100 times its production cost. In such a situation there are windfall profits for a few companies—profits that attract competitors by the dozens and hundreds. With so many competitors, an oversupply of products quickly develops. The result, inevitably, must be price cutting on the part of everyone in the industry—producers, distributors, retailers—in order to clear out the mounting inventory glut.

The groundwork for such a development is being laid day by day in the business/professional software field. There is no doubt that there will be—and in fact, by late 1983 there already were—far too many software products for the market to absorb. And no doubt, either, that price cutting will happen, since one of the features of the software business has been the steady decline of prices over time. What is uncertain is how consumers will react as some prices get slashed dramatically. Unlike the video game field, where consumers eventually tire of one product and go on to the next, the

user of "dBASE II" or "VisiCalc" does not get bored with the product any more than he tires of a dictating machine. If anything, the software user grows more attached to the program over time, as he gains proficiency with it. The problem is not so much the old buyers as the new ones: if "1-2-3" remains priced at $495 but new, competing programs come on the market at $295, $195, perhaps ultimately at $95, how many sales will be shifted to the cheaper alternatives?

Rather than sticking to today's prices until bludgeoned into cuts by competitive forces, leading business/professional software publishers would be well advised to plan on cutting prices by 20% to 30% per year for the next couple of years, much as the semiconductor and computer companies have grown to do. Such a strategy has the overwhelming merit of forcing the software publisher to organize for lower gross margins and greater efficiency, instead of building a business—including administrative overhead and product development budgets—on a structure of gross margins that <u>cannot</u> be sustained very long. No matter how worthy an individual program may be, in the end those publishers that survive and prosper will be those that are most intelligent about sharing profits with the customers who made them possible, in order to assure a long-term flow of funds with which to develop new products.

FORECAST GROWTH IN BUSINESS/PROFESSIONAL SOFTWARE, 1984-86

The medium-term forecast by Communications Trends, Inc. for the business/professional microcomputer software market is presented in Table 7.1. The key to this forecast is the belief that percentage growth in dollar sales will begin to decline significantly in mid 1984, as a result both of price cutting and some saturation in the business market for microcomputers. Thus, from a growth rate that was estimated at 118% in 1983 and is forecast at 75% in 1984, the increase will decline to 54% in 1985 and to 39% in 1986.

The result of these forecasts would be customer purchases of business/professional software that would grow to $1.6 billion in 1984, to $2.5 billion in 1985 and to $3.5 billion in 1986. Despite the forecast decline in annual rate of growth, the <u>dollar</u> increase in market size would still be larger in each succeeding year, although the gains would narrow: the dollar increase is forecast at $702 million in 1984, at $887 million in 1985 and at $975 million in 1986.

Corresponding figures for publisher receipts are $819 million in 1984, $1.26 billion in 1985 and $1.75 billion in 1986, representing annual increases of $351 million, $443 million and $488 million.

These figures represent a median, or best estimate, forecast. But because of the uncertainty about what the true growth rate will be for software publishers, it is more honest to offer a range of possibilities for the future. This is done in Table 7.1 by showing, in each year, a low and high estimate, as well as a median one.

In 1986, the low estimate would mean a market of $2.5 billion in customer purchases and $1.25 billion in publisher receipts, or 40% <u>less</u> than the median

forecast. The high estimate for 1986 is for $4.7 billion in customer purchases and $2.3 billion in publisher receipts, or 33% above the median forecast. The difference in the forecasts can be seen most readily in the last column of Table 7.1, showing the growth in the total market between 1983 and 1986: the low forecast implies overall growth of 205%, whereas the high forecast implies growth of 365%.

Readers are encouraged to make explicit their own judgments about the most likely growth rates and market size for business/professional software in the period covered by this report. The facts and analysis that go into such a forecast are ultimately more important to a company's plans than whether one or another number represents the right size of the market in the future.

Table 7.1:
Forecast Growth in Business/Professional Microcomputer Software, 1983-86

	dollar figures in millions				% change,
	1983	1984	1985	1986	1983-86
CUSTOMER PURCHASES					
H	$1,000	$1,880	$3,100	$4,650	+365%
M	936	1,638	2,525	3,500	+274%
L	820	1,370	1,950	2,500	+205%
PUBLISHER RECEIPTS					
H	$ 500	$ 940	$1,550	$2,325	+365%
M	468	819	1,262	1,750	+274%
L	410	685	975	1,250	+205%

H = high estimate; M = median or best estimate; L = low estimate

Source: Communications Trends, Inc.

8

PROFILES OF LEADING BUSINESS/PROFESSIONAL MICROCOMPUTER SOFTWARE COMPANIES

ADDISON-WESLEY PUBLISHING CO. INC.

Reading, MA 01867
617-944-3700

Donald R. Hammonds, president
J. Larry Jones, executive vice president, Higher Education Group
Ann E. Dilworth, vice president, General Books Division
Royce Hargrove, project manager, School Division (Menlo Park, CA; 415-854-0300)
David Geggis, vice president and director, electronic publishing
L. Brent Manssen, Applications Software Division

Company Description

Addison-Wesley is an independent publisher of books and educational materials for elementary and high schools, colleges, industry and professional markets. Its strengths lie in mathematics and the sciences, and it is a leading publisher of computer science books and computer books for a general audience. For the past three years, sales have been growing at better than 10% per year, with net income increasing at a slower rate.

Software publishing is divided among four divisions at A-W: general books, school, higher education and applications software.

Software Activities

Most of the software for business and professional markets from Addison-Wesley is marketed by the Applications Software Division. Other company units concentrate on educational and home markets, although no division develops its own software. The applications software is divided into three types: general management, financial decision-making and educational management. Five or six new titles were to be released by this division during 1983, with another five scheduled for 1984.

Titles from general books run the gamut from games to tutorial software on Apple BASIC. The el-hi division has basic skills courseware as well as programs in education management. The higher education division was scheduled to release its first software product in November 1983, a 15-disk program to be used in a college physics course. A-W's school, college and general books sales forces market software to retailers and end users; the company also sells through software distributors.

Representative Titles: "Micro-DSS/Finance," $995 IBM, $795 Apple IIe; "Micro-DSS/Analysis," $495 IBM, Apple IIe; "Bursar," $195 Apple, TRS-80; "Energy Monitor," $245 Apple IIe; "Teach Yourself Essentials of Accounting," $79.95 IBM

Terms of Business

A-W acquires software from outside developers for an advance against royalties. It markets to distributors and directly to retailers, offering discounts of 40% to 46% for retailers, and 55% for distributors.

Analysis

Despite its solid reputation in computer books, A-W has its work cut out to become a major software publisher. Price cuts made during 1983 in the prices of its two Micro-DSS packages may indicate somewhat disappointing sales; the market for decision analysis tools is crowded, and highly competitive. Although the general books division is capable of producing business/professional software, its emphasis to date has been on how-to and home titles.

Financials (000)

	9 mos. ending		Fiscal year ending November 30		
	8/31/83	8/31/82	1982	1981	1980
Revenues	$ 86,854	$ 78,309	$102,226	$ 91,476	$ 80,011
Higher ed.			54,232	46,347	40,646
School			39,789	37,093	33,680
General books			8,205	8,036	5,685
Pretax income*	9,987	8,158	9,604	8,301	8,383
Higher ed.			10,495	9,024	8,888
School			2,906	532	1,614
General books			1,107	2,022	962
Net income	4,803	4,273	4,556	3,594	4,430

*net of corporate expenses of $4.9 million in 1982, $3.3 million in 1981 and $3.1 million in 1980

AMERICAN TRAINING INTERNATIONAL INC.
3770 Highland Ave., Suite 201
Manhattan Beach, CA 90266
213-546-4725

Francis E. Gaskins III, president
Joel Rakow, executive vice president
Ralph E. Fascitelli, vice president, sales and marketing
Ronald J. Tirrell, controller and treasurer
John J. Reilley, vice president, operations

Company Description

ATI was founded in August 1981 by Francis Gaskins and Joel Rakow, with no outside capital. As of the end of 1983, ATI had 40 employees, of whom 10 to 15 were involved in software development. The company produces interactive training software that enables users to master popular software packages in a matter of hours.

The key to ATI's success seems to be the proprietary computer-based authoring language which facilitates the simulation of almost any software on virtually any microcomputer. The language was developed in ATI's first year of operation. Currently, ATI Training Power programs cover 23 software packages, including "1-2-3," "dBASE II," "EasyWriter II," "Multiplan," "VisiCalc," MS DOS, BASIC and other programs.

In late 1983, SFN Companies purchased a 25% interest in ATI and has the option to increase its stake. Another development was the creation in October 1983 of an international marketing division aimed at selling ATI's products in Europe.

Software Activities

All training products are developed in-house. ATI has concentrated on the top selling programs in each major category of microcomputer software. Rather than expand into other types of software, it has attempted to expand its marketing channels through distribution agreements with SFN and Advanced Systems Inc. as well as through creation of the international division.

ATI sells to distributors, major retailers like ComputerLand and IBM Products Centers and through distribution arranagements with Advanced Systems and South-Western Publishing. It uses manufacturers' reps to sell to individual dealers.

Representative Titles: ATI Training Power for "Lotus 1-2-3," "dBASE II," "EasyWriter II," "WordStar," "Perfect Writer," "Multiplan," "VisiCalc," $75 each

Terms of Business

Standard discount to dealers is 40%, increasing with volume.

Analysis

Rapid growth in the number of new microcomputer users has created the opening for ATI and its competitors in the computer training field. Its future is directly tied to the proliferation of software; since the introduction of new software products shows no sign of slowing down, ATI will have no lack of publishing opportunities in the next several years.

Financials (millions)

	Fiscal year ending July 31	
	1983	1982
Revenues*	$3.0	NS

*estimated
NS = not significant

ASHTON-TATE
10150 W. Jefferson Blvd.
Culver City, CA 90230
213-204-5570

George Tate, chairman
David Cole, president
Charles Babbitt, executive vice president
Rodney Turner, vice president, product marketing
C. Wayne Ratliff, vice president, new technology

Company Description

Ashton-Tate was founded in 1980 under the name Software Plus, and changed its name in May 1983. Most of its initial revenues came from distribution of third party software, but in the fiscal year ended January 31, 1983, more than 50% of its revenues came from sales of its own products—principally "dBASE II"—and the balance from distributing other companies' software. In May 1983 the company spun off its wholesale distribution business to its shareholders, and in August 1983 it acquired all rights to "dBASE" in exchange for $150,000, a $6.35 million promissory note and 392,000 shares of common stock valued at $2.1 million.

As of September 1983, Ashton-Tate had 234 employees, including 111 in product marketing, sales and support and 24 in product development.

Software Activities

More than 80% of A-T's revenues in the six months ended July 31, 1983 came from "dBASE II," which has sold more than 150,000 units worldwide. "dBASE II" is a data base management system for creating, storing, editing and retrieving data bases and for generating reports. It can be used to sort data into any desired order and to create standard or custom-formatted reports. "dBASE II" was created by C. Wayne Ratliff, who has sold his interest in the program and is now a vice president and shareholder of Ashton-Tate.

Its other titles have enjoyed only mediocre success: "The Financial Planner" and "Bottom Line Strategist" accounted for 7% and 4% of revenues in the six months ended July 31, and after heavy returns, the company discontinued "Bottom Line Strategist." A-T introduced a new, lower-level data base management program, "Friday!," in July and had sold 4500 units by September.

Ashton-Tate markets directly to dealers, which account for 44% of sales; to distributors (mainly Softsel, Micro D and Softeam), which account for 28%; to hardware OEMs, which account for 9%; to software OEMs, which account for 2%; and to foreign distributors, which account for 14%. A-T has 80 sales and marketing employees in Los Angeles and is establishing regional sales offices in Chicago, New York and six other cities. It spent $1.6 million on advertising and promotion in the six months ended July 31, 1983.

Representative Titles: "dBASE II," $700; "The Financial Planner," $700; "Friday," $295

Terms of Business

Ashton-Tate's discount to dealers starts at 40% and increases with volume. Royalties paid to authors start as low as .625% of list price and go up to 25% of list price; total royalties, mainly on "dBASE II," were $1.8 million or 10% of sales for the year ended January 31, 1983.

Analysis

Ashton-Tate announced a public offering in September 1983, seeking to sell 1.1 million shares, with shareholders disposing of another 600,000. Proceeds from the offering will help finance the acquisition of "dBASE II" and other new software products. Nevertheless, Ashton-Tate's record in developing products that will augment "dBASE II" has not been striking.

Financials (thousands)

	6 mos. ending		Fiscal year ending January 31		
	7/31/83	7/31/82	1983	1982	1981*
Revenues	$18,016	$ 6,218	$18,100	$3,651	$ 465
Operating income	5,202	615	1,883	(313)	48
Pretax income	5,224	615	1,925	(312)	48
Net income	2,640	344	1,071	(175)	40

*period from August 26, 1980 to January 31, 1981

NB: The above are historical financial results that include A-T's now divested distribution business. On a pro forma basis, revenues for six months ended July 31, 1983 and 1982 would have been $14.9 million and $2.6 million; pretax income would have been $5.4 million and $887,000; and net income would have been $2.7 million and $444,000. Pro forma results for the year ended January 31, 1983 would have been: revenues, $10.0 million; pretax income, $3.2 million; net income, $1.6 million.

BPI SYSTEMS INC.
3423 Guadalupe
Austin, TX 78705
512-454-2801

John A. Moss, chairman
Randall W. Ferguson, president
Kenneth DeBower, executive vice president, treasurer
Thomas O. Meadows, senior vice president, marketing

Company Description

BPI Systems produces accounting and other applications software for microcomputers. It was founded in 1979 and until its fiscal 1982 year, most of its revenues came from programs for the Apple II. In that year BPI began producing software for Commodore and IBM computers as well. Most of BPI's revenues come from OEM sales or licenses with the major microcomputer manufacturers. In its fiscal 1983, it sold or licensed 59,000 packages. BPI employed 111 people as of June 1983. The company went public in June 1982.

Software Activities

BPI's accounting software includes general ledger accounting and the preparation of financial statements; accounts receivable and accounts payable systems; and programs for payroll records, inventory control, job costing, professional time accounting, church management and personal accounting. Most of its software is developed by an in-house staff of 54 programmers, technical writers and systems auditors; it also acquires programs from outside developers.

Programs under development include tax return preparation, medical and dental billing and financial forecasting and modeling.

BPI sells finished software packages to Apple, Commodore, NEC, Sanyo and Texas Instruments, and licenses programs to Atari, Digital Equipment, Hewlett-Packard and IBM. Only in fiscal 1983 did the company begin to sell to dealers and distributors under its own name. In fiscal '83, Apple accounted for 55% of total revenues, and IBM for 20%. Some of its programs are developed under contracts with manufacturers which call for reimbursement of fixed development fees and for minimum purchases of finished programs.

Representative Titles: "BPI Accounts Receivable" (Apple, $395); "BPI General Accounting" (Apple, $395); "BPI Accounts Payable" (Apple, $395); "BPI Personal Accounting" (IBM, $195)

Terms of Business

Discounts to dealers start at 40%. Discounts on programs sold to manufacturers probably average more than 70% off list price.

Analysis

BPI has shown considerable growth and a high rate of profitability (25% pretax in fiscal '83, 20% aftertax in the first six months of fiscal '84) by concentrating on OEM sales and licenses. Such a strategy reduces risk, as many of its programs are pre-sold to manufacturers, and keeps marketing costs to a minimum. Continuation of this policy, however, would mean that BPI would forego most of the retail price paid by customers for its products, in contrast to such major publishers as Visicorp, Ashton-Tate, Lotus and Peachtree. Thus the company is moving to increase the proportion of direct sales to total revenues.

Financials (thousands)

	6 mos. ending		Fiscal year ending March 31		
	9/30/83	9/30/82	1983	1982	1981
Revenues	$4,940.5	$2,681.2	$6,076.1	$4,065.4	$1,672.1
Software systems			4,068.5	3,140.6	1,539.8
Software development			2,007.6	924.8	132.3
Operating profit			2,373.8	1,892.4	254.6
Net income	1,027.9	684.3	1,576.0	1,089.5	174.5

CDEX CORP.
5050 El Camino Real
Suite 200
Los Altos, CA 94022
415-964-7600

Stephen Brandt, chairman
Bruce Frisch, president
Carl Roetter, vice president, software development
Mark Belinsky, national accounts manager
John Noon, marketing manager

Company Description

Cdex was founded in July 1982 with $2 million in venture capital to produce computer-assisted training products for the business and professional markets. The company uses outside experts in designing its products but actual development of software is done in-house.

The Cdex Personal Computer training line is one of four planned product lines; in November 1983, Cdex announced the first programs in a new Business Systems Series designed to help small businesses computerize their operations. Development of the Personal Computer training line was Cdex's primary focus in 1982. The company created a "courseware development system"—called XPL—to aid in the production of computer-based training; it converts written manuscripts into computer code.

Cdex employed 45 people as of late 1983, primarily instructional designers, computer scientists, administrative and marketing personnel.

Software Activities

At the end of 1983 Cdex had 20 products on the market and plans for another 35; it intends to release two to five training products per month in 1984. By the end of 1984 it expects to have more than 60 products in its catalog. Existing titles cover: systems/computer literacy, business productivity, word processing, data base management, spreadsheet analysis and data communications. Each Cdex title is designed for a specific product, e.g., "VisiCalc" or "Multiplan." Programs consist of interactive tutorials using computer disks as the primary medium of instruction.

Representative Titles: "The VisiCalc Program," $69.95 IBM, $59.95 Apple; "Managing Your Business with the SuperCalc or SuperCalc2 Program," $69.95 IBM, $59.95 Apple; "How to Use Your IBM Personal Computer with PC DOS," $69.95; "How to Use Your Apple IIe," $59.95

Terms of Business

Cdex sells through distributors and retailers. Discounts begin at 40% for retailers and 50% for wholesalers.

Analysis

Cdex identified a promising niche created by the booming personal computer field and the need of thousands of users to become familiar with new hardware and software products. By moving quickly to offer a broad line of disk-based training products, it staked out an important position in this field. New generations of hardware and software will deepen the need for training, although Cdex will face competition from new entrants like SFN as well as from training products offered by applications software companies themselves, e.g., Visicorp's "VisiTutor" program.

Financials (millions)

	1983	1982
Revenues*	$4.0	NS

NS = not significant
*projected

COMPUTER ASSOCIATES INTERNATIONAL INC./ INFORMATION UNLIMITED SOFTWARE

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516-333-6700

Charles B. Wang, president
Anthony B. Wang, executive vice president

Information Unlimited Software (IUS)
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415-331-6700

Stefan E. Bothe, president
Mark Farnell, director of marketing
Paul Chaison, vice president, research and development

Company Description

For most of its existence, Computer Associates concentrated on developing and marketing systems software for IBM and IBM-compatible mainframes. Recently it has expanded into data base management systems, applications software and, with the acquisition of IUS in July 1983, microcomputer software.

In the mainframe area, Computer Associates licenses its software to over 24,000 users, including some 75% of the Fortune 500 companies. It employs more than 950 people—including 105 at IUS—of whom more than 150 work in product development and 450 in sales and support.

Software Activities

Computer Associates markets more than 50 software products, of which 40 are mainframe programs. Four mainframe products, "CA-DYNAM/T," "CA-SORT," "CA-DYNAM/D" and "CA-OPTIMIZER" represented 66% of sales, prior to the acquisition of IUS. Mainframe products are not sold outright, but are licensed to customers on a perpetual or annual license basis.

The IUS product line encompasses 10 titles, including its bestselling "EasyWriter" word processing program, one of the first word processing programs to become available for the IBM PC. Other programs include mailing and spelling programs and the "EasyBusiness" series in accounting and payroll. As of fall 1983, "EasyWriter" had sold more than 50,000 units, making it one of the 10 bestselling word processing programs.

IUS programs are developed by Basic Software Group (Vancouver, BC, Canada). IUS markets through distributors and to major retailers. In fall 1983 it began an advertising and dealer promotion program for a package offering its word processing, spelling and mail programs at a combined price of $575, a $175 saving off the regular price.

Representative Titles: "EasyWriter II," $350 (IBM PC); "EasySpeller II," $225 (IBM); "EasyMailer II," $175 (IBM); "Professional EasyWriter," $175 (Apple); "General Ledger," $595 (IBM); "Inventory Control," $595 (IBM)

Terms of Business

Dealer discounts range between 40% and 50%, depending on quantity and on whether titles are purchased directly from IUS or through distributors.

Analysis

Although "EasyWriter" has sold a large number of units, its competitive position has weakened with the introduction of many new word processing programs. "EasyWriter II" only occasionally makes the Softsel bestseller list, whereas programs like "WordStar," "Bank Street Writer" and "Multimate" are on the list week after week. To maintain or enhance IUS' position in the microcomputer market will require substantial investment. Computer Associates, which raised $55 million in a stock offering in summer 1983, appears ready to pursue such investments.

Financials (000)

	6 mos. ending		Fiscal year ending March 31		
	9/30/83	9/30/82	1983	1982	1981
Revenues*	$34,402	$24,457	$58,148	$43,178	$30,269
Pretax income			9,009	5,215	4,443
Net income	2,056	905	5,485	2,911	2,482

*IUS revenues were approximately $5 million in calendar 1982

DIGITAL RESEARCH CORP.
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Gary Kildall, chairman
John Rowley, president
Stan McKee, chief financial officer
Richard Dixon, acting marketing director
Stephen Maysonave, vice president, sales and world trade

Company Description

Founded in 1976, Digital Research Corp. is one of the oldest microcomputer software publishers, and its CP/M operating system is one of the most common today. Digital Research is expanding far beyond CP/M, however, with its consumer division and applications library, each of which was begun in 1983.

In an apparent effort to reduce its reliance on CP/M (in the face of the success of MS-DOS from rival Microsoft), DRC has increased its efforts in graphics software and ancillary hardware (boards and add-on devices). Currently the company employs more than 450 people in six areas: operating systems, programming languages, programming tools, applications library, consumer division and ancillary hardware. More than 100 of the employees are software engineers.

Software Activities

Digital Research's traditional software strengths were operating systems and languages; in operating systems, it has upgraded CP/M with CP/M-86, which allows more than one function to be carried on by the computer user at a time. However, DRC's major new emphasis has been on its applications library. Taking bestselling programs, Digital Research adds a special version of CP/M which enables users to have the operating system and software online at the same time.

Existing bestsellers such as "WordStar" will retail for the same price with CP/M as the basic program without CP/M. DRC will place the library version in its own packaging, which will include a tutorial and demonstration disk. All documentation for programs in the applications library has been rewritten by DRC staff in a standard format. In addition to the CP/M versions, however, DRC will also sell applications library editions with MS-DOS incorporated on the program diskette--a recognition of MS-DOS popularity in the IBM PC.

Digital Research is also banking on graphics programs to be the next growth area. Its "DR-Graph" and "DR-DRAW" will be marketed as part of the applications library.

Although Digital Research does most software development in-house, it has been inundated with program submissions since announcing the applications

library. Software authors have traditionally viewed DRC as a prime candidate for marketing their products.

Along with the broadened product line has come an increased emphasis on marketing and promotion: DRC named a new advertising agency November 1, 1983 with an anticipated media budget of $3 million for the next 12 months--much of that slated for the applications library.

Representative Titles: Programming tools: "Display Manager," $400 (8-bit), $500 (16-bit); "Access Manager," ($300/$400). Applications library: "WordStar," $495; "Multiplan," $275; "DR-Graph," $295; "DR-DRAW" (no price announced); Programming languages: "CBASIC," $200; "Pascal/MT+," $400; Operating systems: "Concurrent CP/M 86," $350

Terms of Business

Digital Research does not deal with individual retailers. Large chains qualify for a 50% discount; distributors get 60%. The discount structure is currently under review.

Analysis

With the success of the IBM PC and its preferred MS-DOS operating system, Digital Research has had to adapt to a number two position in this most lucrative of personal computer markets. The decision to expand the applications library beyond CP/M is an important strategic turning point for DRC. Although CP/M will remain a viable operating system for years to come, Digital Research felt it had no choice but to come to grips with the present dominance of MS-DOS in the vital IBM PC and PC-compatible market.

Financials (millions)

	Fiscal year ending August 31		
	1983	1982	1981
Revenues*	$38.0	$23.0	$15.0

*estimated

DOW JONES & CO.
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212-285-5000

Warren H. Phillips, chairman
Ray Shaw, president
William L. Dunn, vice president and general manager
Timothy Turner, director of marketing, Dow Jones Software
Eric Bradshaw, national sales manager, Dow Jones Software

Company Description

Dow Jones is one of the leading suppliers of business information in the U.S. through its publication of the Wall Street Journal, the nation's largest daily newspaper, with circulation exceeding 2 million, and of Barron's, a weekly investors' newspaper whose circulation tops 200,000. The company also owns American Demographics magazine; Richard D. Irwin, a business book publisher; and a news service and electronic information retrieval service.

Dow Jones' electronic publishing activities are centered in its Dow Jones News Retrieval division, headquartered in Princeton, NJ. DJN/R had 100,000 customers to its online retrieval service as of October 1983, and the customer base was growing by 5000 per month. DJN/R makes available the contents of the Journal and Barron's online, and also distributes dozens of other data bases, including the Disclosure reports on public companies; sports news; and the "Academic American Encyclopedia" from Grolier.

Software Activities

Dow Jones' software publishing began in 1982. Titles were developed by three outside companies: Teleware, Inc., RTR Software Inc. and National Softworks. The software offerings complement the News Retrieval service by enabling customers to perform stock market, company and portfolio analysis. Titles are available in Apple and IBM PC formats.

Dow Jones markets the software through 19 independent manufacturers' reps and its own sales force of six people. As of fall 1983 it was discussing selling the products through software distributors but had not yet done so.

Dow Jones has actively promoted and advertised the software in the Journal, in business magazines (Business Week, Fortune), and in computer magazines like PC, Byte, Personal Computing and Softalk.

Representative Titles: "Dow Jones Market Analyzer," $349; "Dow Jones Market Manager," $299; "Dow Jones Market Microscope," $699

Terms of Business

Dow Jones sells to retailers on the following discount schedule: 1-4 copies, 33% off; 5-9, 40% off; 10-99, 45% off; 100-249, 47% off; 250-plus, 50% off; larger quantities, prices on request.

Analysis

Dow Jones' franchise with the business community and individual investors gives it a strong base from which to extend its software publishing activities. Dow Jones News Retrieval has been growing at 100% per year for several years, and the growth rate in software products is likely to be at that rate or better in the near term.

Financials (millions)

	9 mos. ending		Year ending December 31		
	9/30/83	9/30/82	1982	1981	1980
Revenues	$632.7	$533.1	$730.7	$641.0	$530.7
National publications & services			562.1	489.8	389.8
Info services*			(62.8)	(49.1)	(38.3)
Community newspapers			123.6	110.2	103.5
Book publishing			45.0	41.1	37.3
Operating income	150.1	111.9	149.4	135.3	96.7
National publications & services			138.5	121.1	80.4
Community newspapers			21.6	18.7	19.4
Book publishing			9.6	8.9	8.8
Corporate			(20.2)	(13.4)	(11.8)
Net income	80.8	63.7	88.1	71.4	58.9

*Calculated by Communications Trends, Inc. Includes Dow Jones News Service, News Retrieval and software publishing.

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Harrington Drake, chairman, D&B
Charles W. Moritz, president, D&B
James McCormack, chairman, McCormack & Dodge
Frank Dodge, president, M&D
Robert K. Weiler, vice president, marketing, M&D
John B. Landry, senior vice president, research & development, M&D

Company Description

Dun & Bradstreet is the largest provider of business information services in the U.S. Its three principal groups are: business information services (credit information, timesharing), publishing (trade magazines, directories, Moody's financial information) and marketing services (mailing lists, other).

D&B got out of a fourth business, broadcasting, in 1983, with an agreement to sell its Corinthian Broadcasting subsidiary to A.H. Belo for $606 million. The company indicated it would invest the proceeds in the mainstream of the business services and information industry.

Acquisition of National CSS, Technical Publishing and McCormack & Dodge in recent years indicates expansion by D&B into computer services and related fields. Technical Publishing's 20 trade and professional magazines (including Datamation and Software News) offer many jumping off points for other services. Similarly, National CSS, primarily a timesharing service, has acquired Multiple Funding Services, a software publisher specializing in the insurance industry. With conventional timesharing on the decline, mini and micro software services offer growth potential for National CSS.

McCormack & Dodge, which was acquired by D&B in March 1983 for $50 million, concentrates on the mainframe and minicomputer market. Its most recent product, "PC Link," joins IBM PCs to IBM mainframes, enabling the PC user to tap M&D software systems such as its general ledger, accounts payable and human resource packages. Despite the steep price of $25,000 for the package plus $2500 for each PC attached, M&D had lined up more than 100 customers by the end of 1983. "PC Link" will also include "1-2-3" from Lotus Development Corp.

D&B inaugurated DunsPlus, a new company, in 1983. DunsPlus markets an enhanced IBM PC XT that includes "1-2-3," "Multimate," a modem and built-in software to access mainframe computers. The system sells for $10,200; IBM provides installation and DunsPlus provides classroom training.

Software Activities

McCormack & Dodge employs between 550 and 600 people, of whom 25 work in a central research and development department. Other development is done by individual project groups. Mainframe products include general ledger, accounts payable, fixed asset accounting, payroll/personnel records, etc. These products have recently been combined in a "borderless" environment package called "Millenium," which also includes "PC Link." Besides IBM mainframes, M&D software is also available for Digital Equipment, Hewlett-Packard and IBM minicomputers.

McCormack & Dodge had revenues of $38.6 million in 1982, up from $26.2 million in 1981. Growth in 1983 was expected to be 40%, which would mean revenues for the year of around $50 million.

Representative Titles: "PC Link," $25,000 plus $2500 for each PC. Mainframe products: "General Ledger," "Accounts Payable," "Human Resources"

Terms of Business

M&D's mainframe and minicomputer software is generally licensed on an annual basis. "PC Link" will be sold on a perpetual lease basis.

Analysis

With the acquisition of McCormack & Dodge, D&B has both the technical and financial resources to be a significant force in microcomputer software. In addition to adding new applications packages, and expanding to cover other mainframes and minis, M&D can move more directly into microcomputer software, either in broad business categories or specific vertical industries like accounting. D&B may also decide to acquire companies with a specific microcomputer software line to complement M&D's offerings.

Financials (millions)

	9 mos. ending		Fiscal year ending December 31		
	9/30/83	9/30/82	1982	1981	1980
Revenues	$1,177.5	$1,074.8	$1,461.6	$1,331.0	$1,176.1
Business info svcs.			650.6	585.6	502.4
Publishing			483.4	458.5	408.4
Marketing services			226.9	192.1	181.4
Operating income	233.0	206.8	277.9	243.7	206.5
Business info. svcs.			108.6	86.5	56.1
Publishing			145.2	132.1	117.1
Marketing services			24.8	23.8	22.4
Net income	124.7	104.9	142.1	121.5	102.4

NB: McCormack & Dodge, acquired in March 1983, had revenues of $15.6 million in 1980, $26.2 million in 1981 and $38.6 million in 1982.

HAYDEN PUBLISHING CO.
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Hayden Software
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Lowell, MA 01863
617-937-0200

James Mulholland, president, Hayden Publishing Co.
Oscar Rodriguez, president, Hayden Software Co.
Bruce Twickler, vice president, marketing
William Overhold, group director, commercial products
Gail Rothenberg, director, home software

Company Description

Hayden Publishing Co. is a leading publisher of computer magazines and books. Its magazines include Personal Computing, Computer Decisions and Personal Software; its book company will publish more than 60 computer titles in 1983.

Hayden Software began as a component of the book company; in January 1982 it was spun off as a separate unit and moved to Lowell. Its products cover a broad range, from the "ORCA/M" program used by programmers to "Sargon II," a chess-playing program. The division incurred heavy losses in its startup phases, but was expecting to do better in 1983 and beyond.

Software Activities

Like most software companies with book publishing roots, Hayden does little in-house software development; most of its products are developed and refined by outside creators. Hayden markets two main categories of software: commercial and home. The commercial software mainly consists of programming tools like "ORCA/M." The home software is in the process of expansion, with a major series of inexpensive programs to be introduced in late 1983 and early 1984. Included will be an inexpensive word processing program, "The Writer," which will be priced at about $60 to compete with "Bank Street Writer." Other titles will include a spelling checker and a basic spreadsheet. Hayden sees the market for such programs as 10,000 to 12,000 units each.

Hayden's current bestsellers include "Sargon II" (10,000 to 12,000 sold as of October 1983) and "PIE:Writer" (5000 to 6000 sold). A programmer's aid like "ORCA/M," by contrast, probably has a maximum sale of 2000 units.

Hayden Book Co. handles its own software distribution to bookstores; Hayden Software distributes to computer and software stores and to mass merchandisers on its own and through Softsel, Micro D and other distributors.

Representative Titles: Commercial: "General Ledger" ($499, CP/M); "ORCA/M" ($149, Apple II); "PIE:Writer" ($149.95, Apple II; $199.95, IBM PC); Home:

"Sargon II" ($34.95, Apple II, VIC-20); "How to Program in Applesoft" ($49.95, Apple II); "Go" ($34.95, Apple II)

Terms of Business

Hayden acquires programs on a royalty basis; advances average 20% of expected royalties; royalties range between 10% and 20% of net receipts. Dealer discounts begin at 40%; a national account can receive a 45% discount, a 5% co-op allowance and quarterly rebates, for an effective discount of 50%. Distributor discount is 55%.

Analysis

Hayden has found the economics of software publishing and distribution tough to master; its current emphasis seems to be on lower-priced home programs that can sell to bookstores and other general retailers where Hayden's book lines are well established.

Financials (millions)	Fiscal year ending December 31		
	1983	1982	1981
Hayden Publishing revenues	$55.0*	$40.0	$30.0
Hayden Software*	4.0	2.0	NA

*Estimated

INNOVATIVE SOFTWARE
9300 W. 110 St., Suite 380
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913-383-1089

Michael J. Brown, president
Mark R. Callegari, vice president

Company Description

Innovative Software designs, sells and supports business-oriented applications programs for IBM PC and PC-compatible microcomputers, as well for the Osborne I, the Victor 9000 and the Wang PC. The company was founded in 1980 and sales in its fiscal 1983, ending June 30, were more than 150% above the previous year. Nevertheless, with under $2 million in gross revenues Innovative is one of the smaller business software companies.

The company went public in September 1983, raising about $4.4 million from sale of 530,000 common shares. Its plan was to sink $2.5 million of these proceeds into advertising and promotion of its programs over the next 12 months.

Software Activities

As of June 1983, Innovative Software employed 16 people, of whom three were involved in product development and five worked in direct sales. Most of its software titles are developed by outside contractors in return for an advance against royalties. Under its Executive Series, IS offers data base and file management programs as well as a color graphics package. In the fourth quarter of 1983 it planned to introduce integrated programs under the common name, "The Smart..." in word processing, data base management and spreadsheet analysis. Expansion of its work force and increased advertising and promotion costs caused a substantial loss in the first quarter of its fiscal 1984, ending September 30, 1983.

Innovative Software sells to distributors, computer store chains and individual dealers, as well as to manufacturers under OEM licenses. In its fiscal '83, sales to ComputerLand and Sears Business Centers accounted for 37% and 16% of revenues. Major OEM licenses in 1983 were negotiated with Columbia Data Products and with NCR.

Representative Titles: "Fast Graphs," $295; "Fast Facts," $195; "T.I.M" (Total Information Management), $495; "The Smart Word Processor," $475; "The Smart Data Manager," $595

Terms of Business

Discounts to dealers start at 40% off list. Royalties to outside program developers typically range between 8% and 16% of gross sales, with a "relatively small" advance payment.

Analysis

Innovative Software earned a modest profit on $1.7 million in revenues in its fiscal '83, and took advantage of investors' desire to participate in the software boom to raise capital in a public offering. Its ambitious advertising and promotion schedule indicates a desire to challenge the software leaders, but Innovative still remains a relative unknown, and its expansion plans are thus a decided gamble.

Financials (000)

	3 months ending		Fiscal year ending June 30	
	9/30/83	9/30/82	1983	1982
Revenues	$ 480.0	$ 376.7	$1,684.6	$ 666.4
Pretax income	(236.6)	71.4	291.7	158.4
Net income	(154.6)	51.1	208.5	106.5

LOTUS DEVELOPMENT CORP.
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Palmer True, vice president, operations
Marvin L. Goldschmitt, vice president, business development
David K. McElfresh, vice president, product development
Dale Troppito, vice president, software development
James Manzi, vice president, marketing and sales

Company Description

Lotus Development Corp. was organized in April 1982 to create and market microcomputer software. Before beginning operations it raised more than $4 million in venture capital funds through Sevin Rosen Funds.

Lotus released its first product, "1-2-3," in early 1983, and it immediately became a bestseller; as of August 1983, more than 60,000 units had been sold. In August 1983, Lotus filed with the Securities & Exchange Commission to sell 2.6 million shares of common stock through underwriters L.F. Rothschild, Unterberg, Towbin and through Robertson, Colman & Stephens. The offering, completed in October, came to market at $18 per share, for a total of $37 million in funds to the company and more than $9 million to selling shareholders.

Software Activities

Lotus' software activities revolve around its initial product, "1-2-3," which is an integrated business software program offering spreadsheet, graphing and data base management functions. "1-2-3" was designed from the outset for 16-bit personal computers and first released for the IBM PC and IBM-compatible machines, such as COMPAQ and Texas Instruments. Versions for the Digital Equipment Corp. Rainbow, the Grid Compass and the Wang Professional computers were scheduled for the second half of 1983.

Lotus initially sold "1-2-3" to a few national accounts, and through a single software distributor, Softsel, to other retailers. ComputerLand and Softsel accounted for 37% and 28% of sales in the first six months of 1983. Lotus planned to offer the product through other distributors and dealers beginning in September 1983. Dealers who cooperate in selling "1-2-3" to major corporate accounts earn commissions that can be credited to future purchases of Lotus products.

One important feature of Lotus' software activities has been its heavy reliance on advertising, public relations, promotion and dealer support for "1-2-3." In the first six months of 1983, its sales and marketing costs were approximately a third of sales and totaled $4.2 million.

Representative Titles: "1-2-3," $495

Terms of Business

It would appear that the average discount granted to resellers of "1-2-3" is about 55%; basic dealer discounts start at 40%. The fact that a high percentage of sales have been made through a national distributor and a national franchise chain helps explain the high effective discount. As Lotus broadens its sales channels, average discounts may decline in the future.

Analysis

Lotus Development Corp. was a rarity in the software business, or any other business: an overnight success. It achieved more than $29 million in sales in its first nine months of active operation--and all from a single product. The pretax profit margin on these sales was an astounding 47%. The real test, however, will be whether the company can repeat this success with other software products in an increasingly competitive market. The quality of its program and the imaginative and professional marketing campaign that it created to back that program, are undeniable advantages, but are not guarantees of future success.

Financials (000)

	3 mos. ending 9/30/83	9 mos. ending 9/30/83
Revenues	$16,465	$29,103
Pretax income	9,551	13,887
Net income	4,708	6,944

MANAGEMENT SCIENCE AMERICA(MSA)/PEACHTREE SOFTWARE

3445 Peachtree Rd., NE
Atlanta, GA 30326
404-239-2000

John P. Imlay Jr., chairman, MSA
William M. Graves, president, MSA
Dennis Vohs, president, Peachtree
Julian Puckett, vice president, marketing, Peachtree

Company Description

Management Science America is the largest supplier of mainframe applications software in the U.S., and since its acquisition of Peachtree Software, a leading participant in the microcomputer software market as well.

MSA has licensed approximately 8500 software packages for use on mainframe computers. Its customers include manufacturers, distributors, banks, insurance companies, government agencies and educational institutions.

Software Activities

MSA entered the microcomputer software market through the acquisition of Peachtree Software in June 1981. The price paid was 444,424 shares of common stock (worth about $4.5 million), plus the payment of $454,000 to retire certain debentures.

Peachtree's product line encompasses word processing; accounting functions such as general ledger, sales invoicing and accountants payable and receivable; electronic spreadsheets; and other products. A major emphasis for MSA has been developing software packages that link microcomputer users to the company's mainframe. The software is offered under the name "Executive Peachpak II."

MSA and Peachtree have been aggressive marketers of microcomputer software and of mainframe/micro software links. Both the parent company and its subsidiary have advertised heavily in business and computer publications during 1983.

In a further extension of its microcomputer software activities, MSA acquired Edu-Ware Services, Inc., a publisher of educational software, in July 1983; the purchase price was $1.5 million.

Representative Titles: "Peachtext 5000," $395; "Series 4--General Ledger," $395; "Series 4--Accounts Receivable," $395; "Series 4--Peackpak," $395

Terms of Business

Peachtree offers dealers 45% off list price, suggesting that its discount to distributors averages 55%.

Analysis

Peachtree's microcomputer software revenues grew 185% between 1981 and 1982, and based on the growth rate in the first half of 1983, could grow 150% for all of 1983. That growth rate would translate into business/professional software revenues from microcomputers of around $24 million in 1983, or a significant portion of total MSA revenues.

Noting that the high growth rate for micro software is likely to continue for at least several years, MSA is determined to devote corporate resources to developing further micro software products by acquisition as well as internal development. It also seems resolved to market and advertise those products aggressively, in order to increase market share.

As a result of a stock offering in April 1983, when MSA sold 2.5 million common shares at $21 per share, the company was in a very liquid position as of the second half of 1983, with cash and investments of $80.8 million, and total current liabilities of only $25.1 million.

Financials (000)

	9 mos. ending		Year ending December 31		
	9/30/83	9/30/82	1982	1981	1980
Revenues	$ 87,013	$ 59,638	$101,244	$ 73,139	$ 53,724
Peachtree	NA	NA	9,400	3,300	NA
Total costs	85,910	59,186	87,077	63,027	48,365
Pretax income	1,103	452	14,166	10,112	5,359
Net income	574	262	8.955	5,487	2,912

MCGRAW-HILL INC.

1221 Ave. of the Americas
New York, NY 10020
212-512-2000

Joseph Dionne, president, McGraw-Hill Inc.
Donald Fruehling, president, McGraw-Hill Book Co.
Peter Bradley, executive vice president, Book Co.
Joseph Kasputys, president, Data Resources Inc. (24 Hartwell Ave., Lexington, MA 02173; 617-861-0165)
Donald C. Cook, president, Aardvark Software (1020 N. Broadway, Milwaukee, WI 53202; 414-225-7500)

Company Description

McGraw-Hill is one of the two largest publishers of business information in the U.S., as well as a leading educational publisher and TV broadcaster. Its divisions span books, magazines, TV stations, financial information (Standard & Poor's), construction information (F.W. Dodge) and economic information services (Data Resources Inc.). With the acquisition of Aardvark Software Co. (Milwaukee, WI) in June 1983, M-H has the base to move heavily into microcomputer software as well. That acquisition may not be the end of McGraw-Hill's purchases, since the company produces enough surplus cash flow to make a major acquisition every two or three years.

Software Activities

Before the acquisition of Aardvark, which is a unit of the Book Co., McGraw-Hill's software activities were a hodgepodge of dissimilar programs. Individual Book Co. divisions--Gregg, College, and Professional & Reference--produce and market software. Two major types are stand-alone software and courseware. The latter ranges from a full college course in economics (a 10-disk package which was being developed in fall 1983 to sell for more than $500), to "Profit & Loss," a simulation for business planning priced at $99.

In contrast, Aardvark publishes for a specific market segment: accountants and tax lawyers. Its two top sellers are "Professional Tax Planner" and "Estate Tax Planner," and Aardvark is developing an offshoot of the former, "Personal Tax Planner," to be released in fall 1983. The program is designed for Apple IIe and IBM PC and retails for only $99.

In addition to software created by the Book Co. units, Data Resources is also involved in microcomputer software. In cooperation with Visicorp, it has developed "VisiLink," which allows personal computer owners to tap DRI's mainframe computer over telephone lines. The Apple IIe version was released in spring 1983, with the IBM PC version scheduled for late October 1983. With "VisiLink," a customer can obtain preformatted packages of data and manipulate them using "VisiCalc." Other software programs are being developed to increase the accessibility of DRI's data.

Representative Titles: "MicroTSP," (IBM, $395; Apple, $295); "Profit & Loss," $99; "Hypergraphics," (IBM, $395; Apple II+, $295); "Professional Tax Planner," $350; "Professional Estate Planner, $750; "Personal Tax Planner," $99

Terms of Business

Present discount structure is 40% to retailers, 50% to wholesalers. Programs are acquired from outside authors on a royalty basis.

Analysis

McGraw-Hill is a company in search of a focus for its software activities, which were fragmented and on a limited scale as of late 1983. The acquisition of Aardvark, however, may well signal a more aggressive acquisition policy; it seems highly unlikely that McGraw-Hill will watch a major business/professional software business develop without taking a stake in it.

Financials (millions)

	9 mos. ending		Fiscal year ending December 31		
	9/30/83	9/30/82	1982	1981	1980
Revenues	$ 929.7	$ 858.1	$1,193.6	$1,110.1	$1,000.1
Books & Education			389.3	377.7	355.3
Economic Info. Svcs.			71.3	59.3	47.9
Pretax profit	175.6	151.1	214.9	191.5	170.6
Books & Education*			59.8	49.5	49.2
Economic Info. Svcs.*			10.9	8.2	6.1
Net income	89.9	77.4	110.0	98.1	86.4

*operating profit

MICRO D INC.
17406 Mt. Cliffwood Circle
Fountain Valley, CA 92708
714-540-4781

Geza Csige, chairman
Lorraine Mecca, president
Godfred Otuteye. chief financial officer
William Brail, vice president, sales
Michael Shea, vice president, marketing

Company Description

Micro D was founded in 1979 and as of fall 1983 ranked as one of the two largest independent distributors of microcomputer hardware and software. Its growth has been extremely rapid, with sales rising from $3.5 million in fiscal 1980 to $25.3 million in fiscal '82 and to an estimated $75 million in fiscal '83, ending October 31.

It distributes more than 4000 products to more than 3000 retail accounts. Among the principal vendors whose products are carried by Micro D are Hayes, Nippon Electric (NEC), Dysan, Microsoft, MicroPro, Digital Research, Visicorp and, as of October 1983, Lotus Development Corp. (Previously, Lotus had had an exclusive distribution deal with Softsel.)

In its fiscal 1982, more than 50% of Micro D's sales came from peripherals and software for Apple and IBM computers and more than 70% of sales volume came from products with a list price of more than $150. Among its new ventures in 1983 was the startup of a family computer magazine, Micro Discovery.

In July 1983 the company went public by selling 1.7 million shares at a price of $16 per share through Merrill Lynch and L.F. Rothschild. Of the $25 million proceeds, $6 million went to pay off bank debt and the balance was invested in short-term securities pending use for corporate expansion. Micro D employed 184 people, including 55 in sales, as of July 1983.

Software Activities

Micro D carries a full line of business, educational and entertainment software, with sales of higher-priced business titles predominating. Software sales have been the most rapidly growing portion of total revenues, increasing from 2% in fiscal '80 to 16% in fiscal '81 and 31% in fiscal '82; the fiscal '83 percentage was projected to be more than 40%.

The company has a formal evaluation procedure for new software product submissions, though it may waive this process for new products from existing suppliers. It sells to retailers primarily through toll-free telephone lines and ships products from four warehouses: one at its California headquarters, and the others in Columbia, MD, Chicago and Dallas. The Dallas location is the headquarters for Service Software, a division that provides software sales and service to mass merchandisers.

Terms of Business

Micro D offers a 40% discount with the following additional volume discounts: 2% for monthly purchases of $1000; 3% for $2000; 4% for $4000; 5% for $6000; 6% for $8000; 8% for $10,000; 10% for $15,000; and 12% for $20,000. Products are generally sold on a non-returnable basis, except that new software packages can be ordered on 15-day evaluation.

Analysis

Micro D's explosive growth in 1980 through 1983 mirrored the rapid expansion in number of software publishers and number of retail outlets carrying both computers and software. With the entrance of new companies into software distribution in 1982 and 1983, the market has become much more competitive, with margins under pressure from increased selling expense and the need to offer higher discounts to retailers. At the same time, larger retail chains are increasing their direct purchases from software publishers. Micro D is in a strong competitive position, but will still have difficulty showing the kinds of gains in sales and earnings that it achieved in its first three years.

Financials (000)

	9 mos. ending		Fiscal year ending October 31		
	7/31/83	7/31/82	1982	1981	1980
Revenues	$50,907	$16,000	$25,348	$12,440	$ 3,548
Gross profit	8,863	2,838	4,192	1,869	415
Operating income	1,738	897	1,026	438	95
Net income	859	530	595	294	62

MICROPRO INTERNATIONAL CORP.
33 San Pablo Ave.
San Rafael, CA 94903
415-499-1200

Seymour Rubinstein, chairman
Glenn Haney, president and chief executive officer
Frank P. Frost, vice president, domestic sales
William G. Crowell, vice president, product management and development

Company Description

MicroPro was founded in 1978 by Seymour Rubinstein, who had worked for a variety of computer hardware and software companies. It is best known for "WordStar," the bestselling word processing program which had sold more than 600,000 copies as of mid-1983.

Rapid expansion of support staff and marketing personnel got MicroPro into financial difficulties in 1982, but the company reorganized, cut back and regained its footing. In September 1983, the company hired Glenn Haney, an ex-Sperry computer executive, as its chief executive officer, in preparation for a public stock offering at some point in the future.

As of November 1983, MicroPro employed 400 people worldwide, of whom 100 worked in research and product development. The marketing staff included more than 100 people in 20 U.S. and six European sales offices. Total overseas staff exceeded 75 people.

Software Activities

MicroPro develops and markets applications software for 8-bit and 16-bit microcomputers. Its WordStar family of products, including a spelling checker and a mailing list program, accounts for the great bulk of company revenues. As of November 1983, "WordStar" had been on the Softsel Hot List of bestselling programs for 61 weeks.

MicroPro markets its software titles through distributors, directly to large retailers, and directly to large national accounts. The last sales channel is regarded as one of the most promising for future growth.

Another important source of revenue has been the licensing of its products--notably "WordStar"--to computer manufacturers for sale under their name at the time a customer buys his initial computer system.

The company has been looking to expand its product line by taking on software titles developed by outside authors.

Representative Titles: "WordStar," $495; "MailMerge," $250; "SpellStar," $250; (combined price of these three is $695); "InfoStar," $495; "DataStar," $295; "CalcStar," $195

Terms of Business

MicroPro's discount schedule starts at 40% off list price. It reaches 50% for customers buying $10,000 annually, and 60% for those buying $400,000 annually. When MicroPro acquires rights to a product from an outside developer, it is willing to make an upfront payment and to pay royalties based on sales.

Analysis

"WordStar" has proved to have enormous staying power in the face of dozens of competing products, and the cash flow from this blockbuster has enabled MicroPro to develop other software--as well as to make expensive mistakes. The true test of the company will be whether it can come up with other software winners to justify its large development budget. Given the growing number of competing, and often lower-priced, word processing programs coming on the market, MicroPro also faces an important decision on whether to offer a stripped down version of "WordStar" that could be marketed for perhaps half the list price of the main program.

Financials (millions)

	Fiscal year ending August 31		
	1983	1982	1981
Revenues*	$45.0	$22.0	$ 5.0

*estimated

MICROSOFT CORP.
10700 Northup Way
Bellevue, WA 98004
206-828-8080

William Gates, chairman
Jon Shirley, president
Paul Allen, executive vice president
Steve Ballmer, vice president, marketing
C. Rowland Hanson, vice president, communications

Company Description

Microsoft is one of the largest of the independent microcomputer software producers. The company was founded by its present chairman, William Gates, in 1975. Its version of BASIC, MBASIC, is widely used and accounted for all of Microsoft's revenues in its early years. The language is still a significant but declining portion of revenues.

Microsoft is today best known as the systems software house which produced MS-DOS, the operating system for the IBM PC and for other 16-bit microcomputers. More recently, however, Microsoft has moved into applications software such as "Multiplan" and "Microsoft Word." In mid-1983 the company formed a book publishing division, Microsoft Press, but no titles had been released through October 1983.

Besides software, Microsoft produces and sells a variety of accessories, such as system cards and "softcards" for the IBM and Apple computers.

Software Activities

Microsoft has a staff of 250 program developers working in operating systems, languages and applications. Although relatively more time is being spent to catch up in the applications area, Microsoft is maintaining its effort in operating systems and languages. New product releases range from a low of five to a high of 35 new titles per year. Microsoft markets its software through distributors, to computer manufacturers and to major retail accounts.

Representative Titles: "MS-DOS" (bundled with IBM PC and other computers, or sold for $60); "Multiplan," $275; "Microsoft Word," $375 (includes automatic update); "Basic Compiler," $395, "Flight Simulator," $49.95; "Typing Tutor II," $24.95

Terms of Business

Microsoft offers discounts ranging from 35% to 50%, the latter for distributors. Maximum retail discount is 45% on orders of $3500 or more. In dealing with software developers, Microsoft sometimes acquires programs under license, paying the author a royalty based on sales.

Analysis

With its technical expertise and customer reputation, Microsoft is bound to grow along with the personal computer industry. Since MS-DOS has been adopted by many computer manufacturers in hopes of riding IBM's coattails, Microsoft had licensed well over 1 million copies of the systems software by the end of 1983: IBM alone has purchased more than 750,000 copies.

The introduction of the IBM PCjr in early 1984 opens another huge systems software market for Microsoft, which is supplying the operating system. In November 1983, Microsoft showed its "Microsoft Windows" package, which permits computer users to run two or more applications programs at the same time. Makers of more than 20 personal computers agreed to provide the Microsoft product, although IBM was not among them.

Although the growth of the IBM PC market assures Microsoft of steady growth in the years ahead, the company is nevertheless gambling that it can become a significant supplier of applications software as well. To date it has yet to demonstrate that this will be true.

Financials (in millions)*

	Fiscal year ending May 31		
	1983	1982	1981
Revenues	$70.0	$34.0	$16.0

*Microsoft's fiscal year ends May 31, but figures given above are estimates for the calendar years in question.

PERFECT SOFTWARE, INC.
702 Harrison St.
Berkeley, CA 94710
415-527-2626

Duncan Lindsey, co-chairman
Robert Glidden, co-chairman
Buck Lindsey, chief executive officer
Nick Vergis, vice president, marketing

Company Description

Perfect Software was founded in 1981 by two brothers, Duncan and Buck Lindsey, along with Robert Glidden. Its first program, a word processing program called "Perfect Writer," was released in April 1982. Since then the company has assembled a family of applications software, including word processing, data base management and electronic spreadsheet programs.

As of fall 1983, Perfect Software employed about 100 people, of whom 35 worked in product development. In April 1983, the company received $3 million in venture capital from T.A. Associates, Boston, MA, bringing the total venture capital invested in the company to $3.8 million.

Software Activities

Perfect Software has emphasized software development in-house; it has research facilities in Eugene, OR and Austin, TX in addition to its Berkeley headquarters.

Its product line is available for a variety of personal computers, including the IBM PC, Apple II, Kaypro, Columbia Data Products, and such foreign computers as Torch in England and Sord in Japan. Perfect Software has put heavy emphasis on OEM sales, which accounted for an estimated 60% of revenues in 1983.

Perfect Software's marketing strategy involves heavy advertising and promotion and very high distributor and dealer discounts. In April 1983 it launched a $1 million media advertising campaign, and has also spent heavily on exhibits at such key trade shows as two Comdex exhibits, the National Computer Conference and the two Consumer Electronics Shows. A promotion it ran through Softsel and participating dealers in fall 1983 offered $50 consumer rebates on a number of its software titles, with a maximum rebate of $160 to purchasers of the entire line.

Representative Titles: "Perfect Writer," $495; "Perfect Writer/Speller," $695
"Perfect Calc," $295; "Perfect Filer," $595

Terms of Business

Perfect Software offers a basic dealer discount of 66.6%, one of the highest in the industry. Adding a normal distributor discount on top of this, and taking into account the consumer rebate of $50 per program that

Perfect was offering in the fall of 1983, would suggest that Perfect may be netting only 17% of the retail price of its programs.

Analysis

Perfect Software made its initial mark with a sales approach based on OEM deals with manufacturers. In 1983 it became much more aggressive in seeking direct consumer sales through dealers and distributors, with high discounts being the lure for resellers to carry the product line. The greatly increased number of competing titles, however, means that this sales approach is costly, and it will take time to see if it works.

Financials (millions)

	Fiscal year ending March 31	
	1983	1982
Revenues*	$8.0	NS

*estimated
NS = not significant

PRENTICE-HALL INC.
Englewood Cliffs, NJ 07632
201-592-2000

Frank J. Dunnigan, chairman
Donald A. Schaefer, president, chief executive officer
David Amerman, group vice president
Michael Hunter, general manager, General Books Division

Company Description

Prentice-Hall's two strengths are its college textbook division, the largest and most profitable in the industry, and its business and professional publishing activities. It is a major supplier of looseleaf services, newsletters and business books--and is by far the largest publisher of computer books.

Eight different P-H divisions produce microcomputer software, usually from outside developers. In October 1982, Prentice-Hall acquired Software 1040 Inc., a producer of accounting software for minicomputers and microcomputers.

Software Activities

Prentice-Hall produces both books with bound-in diskettes and stand-alone software. Its Reston Publishing subsidiary has the most active software program and has formed a computer group, including both books and software. It publishes software for the IBM PC, Apple, Atari, Commodore and Timex-Sinclair computers. Brady's efforts include game programs and a business graphics program for the IBM PC. The College Division does book/diskette titles as well as stand-alone software.

Although P-H's other divisions contract with outside authors or developers for software, Software 1040 maintains its own staff of 20 programmers and 15 accountants working on program development. Its two major products, "Software 1040" and "Plan 1040," run on IBM minicomputers and various micros. Software 1040 does not sell its programs outright, but gets paid in the form of an annual license fee from customers.

Two major series introduced by P-H in late 1983 and early 1984 were "The Profit Center," consisting of 21 modules in business and accounting developed by Orchid Software (Austin, TX) and "Execuvision," a presentation graphics program. "The Profit Center," introduced at the November 1983 Comdex show, was slated for a multimillion dollar advertising and promotion budget in 1984.

Representative Titles: Reston: "Monarch!," (Timex-Sinclair, $14.95); "Accounting Teach," (IBM, $100); Brady: "Wizard's Cube," (IBM, $39.95); "The Graphics Generator Business and Technical Applications for the IBM Personal Computer," (IBM, $195); Software 1040: "Software 1040," (mini, $2600 per year; micro, $1800 per year); "Plan 1040," (micro, $600 per year); "Tax Planning," (micro, $150 per year); other divisions: "Apple II 6502 Assembly Language

Tutor," $34.95; "Cross Reference Utility: A Programming Aid for the IBM PC," $29.95; "The Profit Center," 21 modules (including "General Accounting," Accounts Receivable," "Accounts Payable") at $400 to $500 per module

Terms of Business

Type X software, selling for under $100 retail and requiring no technical support, has a discount of 30% off for 1 copy; 41% for 5; 42% for 25; to a maximum of 47% for 1000. Type Z software, selling for over $100 and requiring support, has a discount structure of 40% for 1 unit; 43% for 3; 45% (maximum) for 5 or more. Authorized distributors who sign a contract with P-H qualify for a 55% discount across the board.

Analysis

Prentice-Hall is ahead of most book publishers in the number and scope of its software titles, as a result of the activity at Reston and Brady, and the acquisition of Software 1040. Introduction of "The Profit Center" in 1984 signals a major investment by P-H in business software and a declaration of its willingness to spend heavily to get into the market.

In 1983 software should produce less than $1 million in revenues (excluding Software 1040), but in 1984 software revenue should be between $5 million and $10 million. Prentice-Hall has a strong corporate commitment to its computer publishing activities in both book form and software.

Financials (millions)

	9 mos. ending		Fiscal year ending Dec. 31		
	9/30/83	9/30/82	1982	1981	1980
Revenues	$314.5	$292.1	$409.7	$390.6	$353.4
Educational			167.9	156.4	145.6
Business/professional services			161.1	152.0	129.4
Business/prof. bks			53.0	54.1	47.8
Pretax profit	43.8	42.2	65.4	61.0	57.0
Educational*			40.9	34.7	32.0
Business/professional services*			21.6	28.5	24.4
Business/prof. bks*			5.1	5.2	4.2
Net income	24.3	23.5	36.3	33.7	30.8

*operating profit

SATELLITE SOFTWARE INTERNATIONAL INC.

228 West Center
Orem, UT 84057
801-224-8554

Bruce Bastian, president
Alan Ashton, executive vice president
Willard Peterson, vice president, marketing

Company Description

Satellite Software International was founded in 1979 to create software for Data General mainframes and minicomputers. It began offering microcomputer software in November 1982 with release of its "WordPerfect" word processing program. By November 1983 the program had gone through four enhancements, of which the latest was release 3.0, and had become the bestselling word processor for the IBM PC according to the bestseller list published in Softalk magazine in November 1983.

SSI employed 43 people as of year-end 1983, a 200% increase from the previous year. About a dozen worked in product development. The company has operated without outside venture capital, generating funds for expansion entirely from internal cash flow. SSI continues to maintain its Data General software and also offers a microcomputer version of the FORTH language.

Software Activities

The company's software development efforts center on refinement of its "WordPerfect" program and on creation of related spreadsheet and data base programs that can be integrated with "WordPerfect." A low-cost version of "WordPerfect," entitled "Personal WordPerfect," was released in 1983 and will be adapted for the IBM PCjr. This program eliminates some of the business math, column and merge features of "WordPerfect" but is otherwise the same program. "WordPerfect" is available for the IBM PC, PC-compatible machines like the Texas Instruments Professional Computer and for other 16-bit machines such as the DEC Rainbow.

SSI sells primarily through distributors, though it also uses a few outside sales reps. It has advertised in computer magazines such as Byte, PC, PC World and Softalk for the IBM PC, but has not had the resources to advertise in general business magazines.

Representative Titles: "WordPerfect," $495 (for IBM, IBM-compatible and other 16-bit computers); "Personal WordPerfect," $195

Terms of Business

SSI sells to dealers at 50% to 55% off list price and to distributors at 65% off list.

Analysis

Like Softword Systems with "Multimate," Satellite Software with "WordPerfect" is an illustration that the small software publisher can still come up with a popular program to challenge the well-capitalized leaders with their heavy advertising and promotion budgets.

Financials (millions)

	1983	1982
Revenues*	$5.0	$2.0

*estimated

SFN COMPANIES INC.
1900 East Ave.
Glenview, IL 60025
312-998-5800

John R. Purcell, chairman
Richard Roberts, president, Scott, Foresman
C. Lemoyne Smith, president, South-Western Publishing (5101 Madison Rd., Cincinnati, OH 45227; 513-271-8811)
Pat Donaghy, president, Silver-Burdett (250 James St., Morristown, NJ 07960; 201-285-7700)
Roger Buoy, president, SFN Electronic Publishing Co.
Dale LaFrenz, vice president, Scott, Foresman

Company Description

SFN Companies is the largest el-hi textbook publisher and one of the largest college publishers in the U.S., through its subsidiaries Scott, Foresman, South-Western and Silver Burdett. SFN also owns University Park Press, a publisher of professional books, but in September 1983 it sold its religious publishing subsidiary, Fleming Revell to Zondervan.

Under chairman John Purcell, SFN has moved into informational publishing by acquiring New York Law Publishing Co., Broadcast Advertiser Reports, and Biomedical Information Corp., as well as a 25% interest in ATI, which produces disk-based training materials for users of personal computer software.

SFN has also strengthened its software and data base publishing activities with the formation of the Electronic Publishing Co. at the corporate level.

Software Activities

SFN's initial activities in software date back to the formation of an electronic publishing group at Scott, Foresman in November 1979. First sales of products came in SFN's fiscal 1981 year, and sales have grown from $300,000 in that year to $3.1 million in fiscal '83.

SFN's software products encompass school, home and professional products, although the latter category remains to be developed. Scott, Foreman's elementary reading and mathematics courseware modules for the TI 99/4A have sold more than 1 million copies. Under an arrangement with Roklan Corp., a producer of computer game software, Scott Foresman is adapting some of its courseware for the home market.

South-Western has successfully introduced accounting and typing software to accompany its bestselling high school accounting and typing textbooks. It has also arranged to distribute popular software titles from Continental Software, producer of the "Home Accountant," and from ATI.

The new Electronic Publishing Co. employs 75 people, with about 20 working in programming and another 20 in editorial. Approximately half the

division's products will be developed in-house; others will be acquired from outside creators on a royalty basis. The company expects to have 35 titles on the market in 1984.

Representative Titles: "Number Bowling," $39.95; "Microcomputer Keyboarding," $200

Terms of Business

On products sold to the home or retail market, SFN offers a discount starting at 40% of list price.

Analysis

Among educational publishers, SFN has made the most significant commitment to computer courseware, as well as exploring adaptation of school programs to the home market. The new Electronic Publishing Co. and SFN's more aggressive corporate acquisition policy, however, appear to herald ex-pansion into business and professional markets. It would not be surprising to see SFN increase its stake in ATI and acquire still other software publishers in the coming months.

Financials (000)

	3 mos. ending		Fiscal year ending April 30		
	7/31/83	7/31/82	1983	1982	1981
Revenues	$107,151	$104,183	$273,427	$251,102	$270,813
El-hi			190,200	170,200	177,900
College			65,200	64,500	54,500
Electronic			3,100	900	300
Professional, trade, other*			14,900	15,500	38,100
Operating income	37,572	38,288	40,171	37,665	56,035
Net income	21,702	21,152	26,485	27,664	35,991

*Reflects sale of William Morrow & Co. in 1981. Results of New York Law Publishing, Broadcast Advertiser Reports not included in 1983 results.

SOFTSEL COMPUTER PRODUCTS INC.
546 N. Oak St.
Inglewood, CA 90302
213-412-1700

David Wagman, chairman
Robert Leff, president
David Blumstein, executive vice president, sales
Scott Hillman, vice president, product services
Bruce Cummings, director, marketing communications

Company Description

Softsel was founded in 1980 by Leff and Wagman as a part-time operation out of a garage. The first full-time employees were hired in January 1981. By mid 1983, the company employed more than 200 people and was distributing more than 3000 software products to more than 4000 dealers. Sales have grown rapidly from $8 million in 1981 to $35 million in 1982, and to an estimated $85 million in 1983.

Facilities include a 55,000 square foot warehouse in Inglewood and additional warehouses in Fairfield, NJ and Chicago. Almost all of the company revenues come from software products, with accessories and supplies contributing a minor amount; Softsel does not sell hardware. It does, however, carry several hundred computer books from such companies as Addison-Wesley, Datamost dilithium, Hayden, Osborne/McGraw-Hill, Prentice-Hall and Sybex.

Software Activities

Softsel carries software from all major vendors, including Microsoft, MicroPro, Visicorp, Peachtree, Sierra On-Line, Broderbund, Software Publishing Corp., Sorcim and dozens of others. Its product evaluation staff considers more than 300 new product submissions per month.

In 1983, business/professional software was estimated to account for about 80% of total software revenues, with entertainment software contributing most of the balance; educational software has been a negligible proportion, although it may grow in the future.

Softsel sells to dealers primarily via toll-free 800 numbers. It publishes a quarterly dealer price guide and a weekly Hot List showing Softsel's top sellers in the categories of business, entertainment and educational software, as well as in books. Throughout 1983, the top spot on the list was held by Lotus Development's "1-2-3," which Softsel sold on an exclusive basis until October. Other services to dealers include sales seminars and a co-op advertising program. Under its Headstart program, Softsel automatically ships participating dealers new computer games that are deemed to be potential good sellers.

Computer stores are the main customers for Softsel. In fall 1983, it abandoned efforts to sell directly to mass merchandisers; a joint program of

sales and rack jobbing had been underway with Pickwick, a leading record distributor and rack jobber.

Terms of Business

Softsel's basic discount starts at 40%, though it is higher on some publishers' lines. In addition, dealers earn volume discounts based on the previous month's purchases: 2% on $1000 or more; 4% on $5000 or more; 6% on $10,000 or more; 8% on $15,000 or more; and 10% on $20,000 or more.

New business software may be ordered on a 30-day evaluation. Dealers can also return for credit (but not cash) any product within 90 days of invoice date.

Analysis

Softsel's broad product line and reputation for speedy, accurate service has earned it the number one position in independent software distribution. Although Micro D is almost the same size in overall volume, Softsel is the clear leader in software sales. The company intends to go public at the appropriate time, perhaps in 1984. Although profit figures are not available, comparison with other distribution businesses suggests that 3% or 4% after tax is a reasonable target in this field.

Financials (millions)

	Fiscal year ending December 31		
	1983	1982	1981
Revenues*	$85.0	$35.0	$8.0
Gross profit*	17.0	7.0	1.6
Net income	NA	NA	NA

*estimated

SOFTWARE ARTS
27 Mica Lane
Wellesley, MA 02181
617-237-4000

Dan S. Bricklin, chairman
Robert Frankston, president
Julian E. Lange, executive vice president
Tracy Licklider, vice president, operations

Company Description

Software Arts was founded in 1979 and in 1983 employed 120 people. Its founder, Dan Bricklin, is best known as the creator of "VisiCalc," which has had a sweeping impact on the way business calculations are performed, as well as on the evolution of the personal computer industry.

The marketing rights to "VisiCalc" are held by Visicorp (formerly Personal Software) and as of October 1983, Visicorp and Software Arts were suing one another over issues of royalties and mutual obligations under their contract. Visicorp claimed that Software Arts had failed to deliver updates to "VisiCalc," while SA alleged that Visicorp's "VisiONCalc" was a derivative of "VisiCalc" and that it was due royalties from its sale.

Software Arts, meanwhile, has begun its own software publishing program with the release of "TK!Solver" in 1983. Even with the release of this program, however, most of SA's revenues continue to come from royalties from the sale of "VisiCalc."

Software Activities

Most of Software Arts' employees work in product development. Development efforts are focused on programs that can represent new applications of personal computers, rather than refinements of existings programs.

"TK!Solver," SA's major program to date, is used by engineers, scientists and businesspeople to solve equations, including exploring possibilities in multi-variable equations. "TK!SolverPacks" are specific applications for specialized fields, including financial management, engineering and science. In addition, McGraw-Hill will be developing SolverPacks from its textbooks. Each SolverPack contains about 12 models which include equations, values and tables for the specific area.

Representative Titles: "VisiCalc," $250 (marketed by Visicorp); "TK!Solver," $299 (available for IBM, Apple, Wang and DEC); "Financial Management," "Introduction to Science," "Mechanical Engineering," ("SolverPacks" to be used with "TK!Solver," at $100 each)

Terms of Business

"TK!Solver" is offered at discounts that start at 40%. The SolverPacks start at 30% off list.

Analysis

Software Arts began as a software development house and is now trying to move into software publishing and marketing. It is a difficult transition at a time when the leading software companies have established direct sales forces and are spending multi-million dollar sums to advertise and promote their products, both to the trade and to the end customer.

Financials (millions)

	1983	1982
Revenues*	$12.0	$8.0

*estimated

SOFTWARE PUBLISHING CORP.
1901 Landings Drive
Mountain View, CA 94013
415-962-8910

Fred Gibbons, president
John Page, vice president, research and development
Janelle Bedke, vice president, marketing
Signe Ostby, marketing manager

Company Description

Software Publishing Corp. was founded in 1980; it produces microcomputer programs for the Apple, IBM and IBM-compatible personal computers. Its first program, "PFS:File," has been an outstanding success, selling more than 200,000 copies as of the summer of 1983. It was followed by companion programs providing reports and graphics. In mid-1983, SPC introduced its word processing program, "PFS:Write." SPC estimated in September 1983 that approximately 250,000 customers were using its programs.

The company employed approximately 100 people as of fall 1983. It maintains an active customer support department to assist dealers and end users in using its programs.

Software Activities

Software Publishing has concentrated on software products with relatively modest prices, and that are easy to use. Although the programs lack all the features and sophistication of certain competitive software titles, they have found a wide market among beginning computer owners.

SPC sells primarily through national distributors like Softsel and Micro D, as well as directly to dealers, and has also licensed IBM to sell OEM versions of its programs. In fiscal 1983 the company spent 40% of all revenues on marketing, including 15% on advertising and promotion. It actively advertises and promotes its programs in computer magazines and national business periodicals.

When it introduced "PFS:Write," the program was promoted with five-column ads in the Wall Street Journal offering a free demonstration disk to anyone who requested it at a participating dealer. Several thousand demo disks were given away in this fashion.

Most software development has been done in-house, with development expenditures representing 15% of revenues. SPC is beginnning to look for outside programs to publish; it also experimented in fall 1983 with a mail order catalog of software from outside suppliers.

New software under development in late 1983 included a communications program, a spreadsheet program and more advanced data management programs.

Representative Titles: "PFS:File," $140; "PFS:Report," $125; "PFS:Graph," $125; "PFS:Write," $140

Terms of Business

Software Publishing Corp. grants discounts to dealers starting at 40% and increasing with volume; distributor discounts start at 55%.

Analysis

Software Publishing Corp.'s approach of functional business productivity software at relatively modest prices has worked to date; the company has established a middle ground between high-priced titles like "WordStar" or "dBASE II" and simple home software priced at under $100. Its effort to crack the highly competitive word processing market will determine whether the company's base of loyal users of "PFS:File" can be persuaded to add yet another SPC title. In the meantime, SPC is working on a more advanced version of "PFS:File" in order not to lose customers who have reached the limitations of the program. In fiscal 1984 the company expects revenues of at least $20 million. It has considered going public but reports no need for outside capital to finance its growth.

Financials (in millions)

	Fiscal year ending September 30		
	1983	1982	1981
Revenues*	$10.0	$4.0	NS

*estimated
NS = not significant

SOFTWORD SYSTEMS, INC.
52 Oakland Ave., North
E. Hartford, CT 06108
203-522-2116

I.J. Ikavalko, chairman
Will Jones, president
Fred Bouchard, vice president, marketing
Mike Wiggins, manager, research and development
Mary Page, advertising manager

Company Description

Softword Systems was founded in early 1982 with a handful of employees. By fall 1983 it had grown to 135 employees and was shipping more than $1 million per month of its only product, a word processing program for the IBM PC called "Multimate." "Multimate" was developed for Connecticut Mutual Life Insurance Co., which had bought large quantities for IBM PCs and wanted a word processing program that would emulate the features of its Wang system. Once the program was delivered, in July 1982, Softword set about offering it for general sale, which began in spring 1983.

Through September 1983, Softword had shipped 31,000 copies of "Multimate" and was selling as many as 6000 per month. The company maintains that "Multimate" is among the top five bestselling word processing programs for the IBM PC.

Software Activities

Softword Systems has an in-house development staff of 40 working on improvements to "Multimate" and new products. The company stresses technical support and provides free updates to the program within 180 days of customer purchase.

Softword sells through distributors and direct to dealers and national accounts through an 18-person inside sales force, plus 17 outside sales people. It has also licensed versions of "Multimate" to seven manufacturers making IBM PC-compatible computers or using the MS-DOS operating system.

New products under development include network word processing programs and communications packages, as well as an advanced version of "Multimate," Release 3.20, to be released by the end of 1983. This version will contain an automatic spelling checker.

Representative Titles: "Multimate," $495 (for IBM PC and PC-compatible computers)

Terms of Business

Softword sells to dealers at 45% off list, increasing to a maximum of 51% on orders of $2500 or more. Distributor discount is 60%.

Analysis

Softword Systems was started with a modest investment and a development contract with an insurance company; in the early months its product sold by word of mouth, although it now does national advertising. Still, with only a single program, and without the resources of much better capitalized competitors, Softword faces a tough challenge in maintaining its growth.

Financials (millions)

	Fiscal year ending March 31	
	1984	1983
Revenues*	$8.0	NS

*projected for fiscal 1984.
NS = not significant.

SORCIM
2310 Lundy Ave.
San Jose, CA 95131
408-942-1727

James Pelkey, president
Haldane King, vice president, marketing
William Ferguson, vice president, sales

Company Description

Sorcim was founded in June 1980 and by October 1983 was employing about 100 people. The mainstay of its product line is a bestselling electronic spreadsheet, "SuperCalc," which has gone through several updates, and which ranks second only to "VisiCalc" among spreadsheet programs in cumulative sales. The company has also entered the word processing market. In fiscal 1983 its sales more than doubled to $10 million, putting it in the ranks of the largest business/professional software publishers.

Software Activities

Sorcim's programs are available for the Apple II, the IBM PC, the Texas Instruments Professional Computer, the NEC professional computer, and 5 1/4-inch and 8-inch CPM formats. Its spreadsheet program, "SuperCalc I," was introduced in 1981; by October 1983 it had sold 350,000 copies--including copies sold by manufacturers on an OEM basis--making it the third bestselling business software program, after "VisiCalc" and "WordStar."

An advanced version of the program, "SuperCalc2" was introduced in early 1983, and a still more advanced version, "SuperCalc3," at the end of the year. This latter product includes data base and graphics capabilities and is seen by the company as a competitor to Lotus Development's integrated software program, "1-2-3." Among the graphics features of "SuperCalc3" are its ability to display data in eight different formats graphics and up to 21 colors. It provides for a maximum of 63 rows by 254 columns, compared to the 256 rows by 2048 columns available in "1-2-3."

Sorcim sells through distributors and dealers, and also on an OEM basis to computer manufacturers. The OEM sales have been particularly important to Sorcim, accounting for about one-third of total revenues, and for a higher proportion of total copies sold.

The company advertises its software in leading computer magazines, including PC Magazine and PC World, and exhibits at computer and dealer shows.

Representative Titles: "SuperCalc," $195; "SuperCalc2," $295; "SuperCalc 3," $395; "SuperWriter," $295 (includes "Spellguard"); "Spellguard," $195

Terms of Business

Sorcim's dealer discount starts at 45% and increases with quantity. Maximum distributor discount is 57%.

Analysis

Sorcim was the first software publisher to provide an electronic spreadsheet program in the CP/M format, thus opening up the market of Apple owners. It has continued to develop and enhance "SuperCalc" to maintain its position as the second largest selling spreadsheet. It remains to be seen, however, whether Sorcim will be successful with "SuperWriter" or other new applications programs.

Financials (millions)

	Fiscal year ending June 30		
	1983	1982	1981
Revenues*	$10.0	$4.0	NS

*estimated. NS = not significant

SRA (SCIENCE RESEARCH ASSOCIATES)

(subsidiary of IBM)
155 N. Wacker Drive
Chicago, IL 60606
312-984-7000

John E. Guth, president
F.R. Walczak, director, international and software publishing
J.K. Cadle, director, information systems, education division
J.A. Chapel, director, school division

Company Description

SRA develops, produces and markets a variety of educational materials, computer courseware and services for the el-hi and college markets. Instructional software for businesses is SRA's major product for the business and professional market. Because of SRA's IBM connection, it has the potential to become a very signficant supplier of computer training materials.

SRA occupies a unique position in the training market, since it is IBM's educational publishing arm for training materials. As such, SRA has a variety of print, audiovisual and computer-based materials which cover IBM products. Expansion of its business instructional software would be a natural way to grow.

Software Activities

SRA has approximately 40 software titles, mostly in educational courseware and instructional management. Some programs for home use have also been developed, in addition to the business training titles.

Representative Titles: "Using the IBM PC and DOS," $55; "Using the VisiCalc Program," $70; "Free Enterprise" (a business simulation which can be used for employee education), $100

Terms of Business

SRA sells directly to businesses and to selected retail outlets. Retailer discounts range between 40% and 45%.

Analysis

In the mid to late 1970s, when the school market turned back to basal textbooks and away from supplementary materials, SRA's bedrock business—its kits and other supplementary materials—began to stagnate. SRA is a leading publisher of computer science and data processing books for college use, and the present emphasis on computer literacy in both school and college would seem to offer a readymade opportunity for SRA in both print and software publishing. In the business/professional market, it has long experience as a publisher of training materials, and could greatly expand its market share if the resources are committed to do so.

Financials (millions)

	1982	1981	1980
Revenues*	$63.0	$59.0	$64.0

*estimated

VISICORP
2895 Zanker Rd.
San Jose, CA 95134
408-946-9000

Dan Fylstra, chairman
Terry Opdendyk, president
David Spencer, marketing director
Eugene K. Buechele, director, research and development
Edward Supplee, director, finance

Company Description

Visicorp was founded under the name Personal Software when Fylstra was a student at Harvard Business School in 1978. (The name was changed to Visicorp in early 1983.) A fellow student, Dan Bricklin of Software Arts, developed the "VisiCalc" electronic spreadsheet at Fylstra's urging, and Fylstra's company obtained a license to market this program. Coming on the market at a time when the population of personal computer owners (mainly Apple and TRS-80) was beginning to soar, the new program both took advantage of this user base, and also gave an important stimulus to hardware sales. It received a further boost from introduction of the IBM PC in late 1981. By late 1983, more than 700,000 copies of "VisiCalc" had been sold.

In late 1983, Visicorp and Software Arts sued one another; Visicorp sought $50 million in damages, alleging that Software Arts failed to provide timely updates of "VisiCalc." Software Arts countersued for $26 million, alleging that "VisiONCalc" is a derivative of "VisiCalc" and that therefore SA is entitled to royalties from its sale.

Visicorp's most ambitious undertaking was its investment in the "VisiON" series of products introduced in fall 1983. This software--similar to the technology in Apple's Lisa computer--uses a hand-held mouse and a series of windows permitting the user to run several applications programs simultaneously, and to carry out various functions of data creation, editing and rearranging merely by moving a pointer to the desired operation on the screen. The introduction involved a multimillion dollar advertising campaign in the business and computer press.

Besides the "VisiON" series, other new Visicorp emphases include: programs for communicating with public and private data bases, developed in conjunction with Data Resources, Inc., Informatics and others; a book publishing division, VisiPress; a training division, VisiTraining; and a maintenance and technical support division, VisiCare. Visicorp also introduced a word processing program, "VisiWord," in 1983.

Software Activities

Visicorp markets its "VisiCalc" family of products for IBM, Apple, Radio Shack, DEC, Wang and other personal computers. A majority of sales are made directly to retail dealers or to national corporate accounts, though distributors are still an important sales channel. "VisiCalc" had been on the Softsel bestseller list for 52 weeks as of September 1983.

Representative Titles: "VisiCalc," $250; "VisiWord," $375; ""VisiFile," $300; "VisiSchedule," $300

Terms of Business

Visicorp sells to distributors and dealers at discounts starting at 36% off list price, and going to 50% or more, depending on quantities ordered.

Analysis

Like other successful software publishers, Visicorp was, until recently, largely a one-product company, with "VisiCalc" accounting for most of its revenues and profits. In 1983 it expanded its product line with mainframe/micro communications links, training and publishing divisions and the "VisiON" software.

The real challenge will be whether it can make a success of the "VisiON" software that has involved a development cost of approximately $10 million. Introduction of the IBM PCjr will open a new home market to Visicorp, as "VisiCalc" is one of two spreadsheets "approved" for the new home computer by IBM.

Financials (millions)

	Fiscal year ending December 31		
	1983	1982	1981
Revenues*	$60.0	$35.0	$20.0

*estimated

JOHN WILEY & SONS, INC.
605 Third Ave.
New York, NY 10158
212-850-6000

W. Bradford Wiley, chairman
Andrew H. Neilly Jr., president and chief executive officer
Kenneth B. Collins, vice president, professional group
Robert C. Douglas, vice president, educational group

Company Description

For 175 years, John Wiley & Sons has been an independent publisher of educational and professional books, reference works, journals, and related learning materials. Wiley's strengths are its college textbook division and its professional group, both of which are strong in the physical sciences, mathematics, business and economics. A major diversification was Wiley's acquisition of Wilson Learning Corp., producer of audiovisual training materials for the career education and industrial training market, in May 1982.

Wiley has become a major publisher of computer books and has entered electronic publishing with software and online data bases. Most of Wiley's software activities are centered in the professional and educational groups.

Software Activities

The educational group's software activities include packages in chemistry and physics. Software publishing in the professional group is split between lower-priced programs aimed at the mass market, e.g., covering investment analysis, and highly specialized packages for the business market, e.g., for project management. Most of Wiley's software has been developed by outside authors or software development companies, sometimes in conjunction with a textbook or professional book.

Wiley's trade sales force and college sales force market software titles to college stores, general bookstores, computer stores and other outlets. The company is also attempting to market sofware by direct mail.

Representative Titles: "Personal Investment Analysis," $60 (for IBM PC); "Varigraph," $80 (for Apple II/IIe); "Buy or Lease: A Financial Decision Maker," $125 (for IBM PC, Apple II/IIe); "Project Management System," $1295; "Concentrated Chemical Concepts," $550 (9 disks for Apple II)

Terms of Business

Wiley is acquiring software rights from authors in exchange for upfront payments and royalties as a percentage of sales; the royalty range is similar to other book publishing, i.e., from 5% to 15% of net sales. Software is sold on a combined discount schedule with computer books: 20% off on 1-4; 40% on 5-49; 41% on 50-99; 42% on 100-199; 43% on 200-299; 44% on 300-499; 45% on 500-999; and 46% on 1000 or more.

Analysis

Wiley's strong position in computer book sales and in other professional and reference subjects gives it a solid base from which to develop a software business. Nevertheless, the company will have to decide whether its emphasis will be on lower-priced software for the consumer market, or higher-priced titles for a business and professional market. In the near term, software seems unlikely to account for more than a couple of percent of total Wiley revenues, unless the company decides to expand by making one or more acquisitions of software companies.

Financials (in millions)

	3 mos. ending		Fiscal year ending April 30		
	7/31/83	7/31/82	1983	1982	1981
Revenues	$48.9	$44.3	$167.1	$137.2	$119.6
Educational			102.4	78.3	65.4
Professional		NA	53.0	49.8	46.2
Journals			11.7	9.1	8.0
Operating income			22.3	18.7	14.0
Net income	4.6	4.0	9.6	10.1	7.5

APPENDIX

Addresses of Major Chains and Franchisers of Computers and Software, 1983

Name	Address
Businessland	3600 Stevens Creek Blvd., San Jose, CA 95117, 408-554-9300
Byte Shops	21130 Cabot Blvd., Hayward, CA 94545, 800-227-2576
CompuShop	1355 Glenville Dr., Richardson, TX 75081, 214-783-1252
ComputerCraft	1616 South Voss Rd., Suite 900, Houston, TX 77057, 713-977-8419
ComputerLand	30985 Santana St., Hayward, CA 94544, 415-487-5000
Computer Factory	485 Lexington Ave., New York, NY 10017, 212-687-5000
Entre Computer Centers	8138 Watson St., McLean, VA 22102, 703-556-0800
Programs Unlimited	125 South Service Rd., Jericho, NY 11753, 516-997-8668
Program Store	4200 Wisconsin Ave. NW, Washington, DC 20016, 202-362-4914
Radio Shack	1800 One Tandy Center, Ft. Worth, TX 76102, 817-390-3700
Softwaire Centers International	9929 West Jefferson Blvd., Culver City, CA 90230, 213-558-1144
Software City	1415 Queen Anne Rd., Teaneck, NJ 07666, 201-833-8510

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